

# SEQUENCE LISTING

<110> Tryggvason, Karl  
Doi, Masayuki  
Thyboll, Jill

<120> Recombinant Laminin 10

<130> 99-274-F.

<140>

<141>

<150> 60/257,449

<151> 2000-12-21

<150> 60/279,282

<151> 2001-03-28

<160> 36

<170> PatentIn Ver. 2.0

<210> 1

<211> 11350

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (68)..(11152)

<220>

<221> sig\_peptide

<222> (68)..(173)

<400> 1

agaccgcgcg ggctcccgcc ggcgcgctg tccctggagc tcggggacgc ggcccggagc 60

cggggaag	atg	gcg	aag	cgg	ctc	tgc	gcg	ggg	agc	gca	ctg	tgt	gtt	cgc	109
	Met	Ala	Lys	Arg	Leu	Cys	Ala	Gly	Ser	Ala	Leu	Cys	Val	Arg	
	1				5					10					

ggc	ccc	cgg	ggc	ccc	gcg	ccg	ctg	ctg	ctg	gtc	ggg	ctg	gcg	ctg	ctg	157
Gly	Pro	Arg	Gly	Pro	Ala	Pro	Leu	Leu	Leu	Val	Gly	Leu	Ala	Leu	Leu	
15					20					25					30	

ggc	gcg	gcg	cgg	gcg	cgg	gag	gag	gcg	ggc	ggc	ggc	ttc	agc	ctg	cac	205
Gly	Ala	Ala	Arg	Ala	Arg	Glu	Glu	Ala	Gly	Gly	Gly	Phe	Ser	Leu	His	
				35				40						45		

ccg	ccc	tac	ttc	aac	ctg	gcc	gag	ggc	gcc	cgc	atc	gcc	gcc	tcc	gcg	253
Pro	Pro	Tyr	Phe	Asn	Leu	Ala	Glu	Gly	Ala	Arg	Ile	Ala	Ala	Ser	Ala	
			50					55					60			

acc	tgc	gga	gag	gag	gcc	ccg	gcg	cgc	ggc	tcc	ccg	cgc	ccc	acc	gag	301
Thr	Cys	Gly	Glu	Glu	Ala	Pro	Ala	Arg	Gly	Ser	Pro	Arg	Pro	Thr	Glu	
		65					70					75				

gac	ctt	tac	tgc	aag	ctg	gta	ggg	ggc	ccc	gtg	gcc	ggc	ggc	gac	ccc	349
Asp	Leu	Tyr	Cys	Lys	Leu	Val	Gly	Gly	Pro	Val	Ala	Gly	Gly	Asp	Pro	

80	85	90	
aac cag acc atc cgg ggc cag tac tgc gac atc tgc acg gct gcc aac			397
Asn Gln Thr Ile Arg Gly Gln Tyr Cys Asp Ile Cys Thr Ala Ala Asn			
95	100	105	110
agc aac aag gca cac ccc gcg agc aat gcc atc gat ggc acg gag cgc			445
Ser Asn Lys Ala His Pro Ala Ser Asn Ala Ile Asp Gly Thr Glu Arg			
	115	120	125
tgg tgg cag agt cca ccg ctg tcc cgc ggc ctg gag tac aac gag gtc			493
Trp Trp Gln Ser Pro Pro Leu Ser Arg Gly Leu Glu Tyr Asn Glu Val			
	130	135	140
aac gtc acc ctg gac ctg ggc cag gtc ttc cac gtg gcc tac gtc ctc			541
Asn Val Thr Leu Asp Leu Gly Gln Val Phe His Val Ala Tyr Val Leu			
	145	150	155
atc aag ttt gcc aac tca ccc cgg ccg gac ctc tgg gtg ctg gag cgg			589
Ile Lys Phe Ala Asn Ser Pro Arg Pro Asp Leu Trp Val Leu Glu Arg			
	160	165	170
tcc atg gac ttc ggc cgc acc tac cag ccc tgg cag ttc ttt gcc tcc			637
Ser Met Asp Phe Gly Arg Thr Tyr Gln Pro Trp Gln Phe Phe Ala Ser			
	175	180	185
tct aag agg gac tgt ctg gag cgc ttc ggg cca cag acg ctg gag cgc			685
Ser Lys Arg Asp Cys Leu Glu Arg Phe Gly Pro Gln Thr Leu Glu Arg			
	195	200	205
atc aca cgg gac gac gca gcc atc tgc acc acc gag tac tca cgc atc			733
Ile Thr Arg Asp Asp Ala Ala Ile Cys Thr Thr Glu Tyr Ser Arg Ile			
	210	215	220
gtg ccc ctg gag aac gga gag atc gtg gtg tcc ctg gtg aac gga cgt			781
Val Pro Leu Glu Asn Gly Glu Ile Val Val Ser Leu Val Asn Gly Arg			
	225	230	235
ccg ggc gcc atg aat ttc tcc tac tcg ccg ctg cta cgt gag ttc acc			829
Pro Gly Ala Met Asn Phe Ser Tyr Ser Pro Leu Leu Arg Glu Phe Thr			
	240	245	250
aag gcc acc aac gtc cgc ctg cgc ttc ctg cgt acc aac acg ctg ctg			877
Lys Ala Thr Asn Val Arg Leu Arg Phe Leu Arg Thr Asn Thr Leu Leu			
	255	260	265
ggc cat ctc atg ggg aag gcg ctg cgc gac ccc acg gtc acc cgc cgc			925
Gly His Leu Met Gly Lys Ala Leu Arg Asp Pro Thr Val Thr Arg Arg			
	275	280	285
tat tat tac agc atc aag gat atc agc atc gga ggc cgc tgt gtc tgc			973
Tyr Tyr Tyr Ser Ile Lys Asp Ile Ser Ile Gly Gly Arg Cys Val Cys			
	290	295	300
cac ggc cac gcg gat gcc tgc gat gcc aaa gac ccc acg gac ccg ttc			1021
His Gly His Ala Asp Ala Cys Asp Ala Lys Asp Pro Thr Asp Pro Phe			
	305	310	315
agg ctg cag tgc acc tgc cag cac aac acc tgc ggg ggc acc tgc gac			1069
Arg Leu Gln Cys Thr Cys Gln His Asn Thr Cys Gly Gly Thr Cys Asp			
	320	325	330

cgc tgc tgc ccc ggc ttc aat cag cag ccg tgg aag cct gcg act gcc Arg Cys Cys Pro Gly Phe Asn Gln Gln Pro Trp Lys Pro Ala Thr Ala 335 340 345 350	1117
aac agt gcc aac gag tgc cag tcc tgt aac tgc tac ggc cat gcc acc Asn Ser Ala Asn Glu Cys Gln Ser Cys Asn Cys Tyr Gly His Ala Thr 355 360 365	1165
gac tgt tac tac gac cct gag gtg gac cgg cgc cgc gcc agc cag agc Asp Cys Tyr Tyr Asp Pro Glu Val Asp Arg Arg Arg Ala Ser Gln Ser 370 375 380	1213
ctg gat ggc acc tat cag ggt ggg ggt gtc tgt atc gac tgc cag cac Leu Asp Gly Thr Tyr Gln Gly Gly Gly Val Cys Ile Asp Cys Gln His 385 390 395	1261
cac acc gcc ggc gtc aac tgt gag cgc tgc ctg ccc ggc ttc tac cgc His Thr Ala Gly Val Asn Cys Glu Arg Cys Leu Pro Gly Phe Tyr Arg 400 405 410	1309
tct ccc aac cac cct ctc gac tcg ccc cac gtc tgc cgc cgc tgc aac Ser Pro Asn His Pro Leu Asp Ser Pro His Val Cys Arg Arg Cys Asn 415 420 425 430	1357
tgc gag tcc gac ttc acg gat ggc acc tgc gag gac ctg acg ggt cga Cys Glu Ser Asp Phe Thr Asp Gly Thr Cys Glu Asp Leu Thr Gly Arg 435 440 445	1405
tgc tac tgc cgg ccc aac ttc tct ggg gag cgg tgt gac gtg tgt gcc Cys Tyr Cys Arg Pro Asn Phe Ser Gly Glu Arg Cys Asp Val Cys Ala 450 455 460	1453
gag ggc ttc acg ggc ttc cca agc tgc tac ccg acg ccc tcg tcc tcc Glu Gly Phe Thr Gly Phe Pro Ser Cys Tyr Pro Thr Pro Ser Ser Ser 465 470 475	1501
aat gac acc agg gag cag gtg ctg cca gct ggc cag att gtg aat tgt Asn Asp Thr Arg Glu Gln Val Leu Pro Ala Gly Gln Ile Val Asn Cys 480 485 490	1549
gac tgc agc gcg gca ggg acc cag ggc aac gcc tgc cgg aag gac cca Asp Cys Ser Ala Ala Gly Thr Gln Gly Asn Ala Cys Arg Lys Asp Pro 495 500 505 510	1597
agg gtg gga cgc tgt ctg tgc aaa ccc aac ttc caa ggc acc cat tgt Arg Val Gly Arg Cys Leu Cys Lys Pro Asn Phe Gln Gly Thr His Cys 515 520 525	1645
gag ctc tgc gcg cca ggg ttc tac ggc ccc ggc tgc cag ccc tgc cag Glu Leu Cys Ala Pro Gly Phe Tyr Gly Pro Gly Cys Gln Pro Cys Gln 530 535 540	1693
tgt tcc agc cct gga gtg gcc gat gac cgc tgt gac cct gac aca ggc Cys Ser Ser Pro Gly Val Ala Asp Asp Arg Cys Asp Pro Asp Thr Gly 545 550 555	1741
cag tgc agg tgc cga gtg ggc ttc gag ggg gcc aca tgt gat cgc tgt Gln Cys Arg Cys Arg Val Gly Phe Glu Gly Ala Thr Cys Asp Arg Cys 560 565 570	1789

gcc ccc ggc tac ttt cac ttc cct ctc tgc cag ttg tgt ggc tgc agc 1837  
 Ala Pro Gly Tyr Phe His Phe Pro Leu Cys Gln Leu Cys Gly Cys Ser  
 575 580 585 590

cct gca gga acc ttg ccc gag ggc tgc gat gag gcc ggc cgc tgc cta 1885  
 Pro Ala Gly Thr Leu Pro Glu Gly Cys Asp Glu Ala Gly Arg Cys Leu  
 595 600 605

tgc cag cct gag ttt gct gga cct cat tgt gac cgg tgc cgc cct ggc 1933  
 Cys Gln Pro Glu Phe Ala Gly Pro His Cys Asp Arg Cys Arg Pro Gly  
 610 615 620

tac cat ggt ttc ccc aac tgc caa gca tgc acc tgc gac cct cgg gga 1981  
 Tyr His Gly Phe Pro Asn Cys Gln Ala Cys Thr Cys Asp Pro Arg Gly  
 625 630 635

gcc ctg gac cag ctc tgt ggg gcg gga ggt ttg tgc cgc tgc cgc ccc 2029  
 Ala Leu Asp Gln Leu Cys Gly Ala Gly Gly Leu Cys Arg Cys Arg Pro  
 640 645 650

ggc tac aca ggc act gcc tgc cag gaa tgc agc ccc ggc ttt cac ggc 2077  
 Gly Tyr Thr Gly Thr Ala Cys Gln Glu Cys Ser Pro Gly Phe His Gly  
 655 660 665 670

ttc ccc agc tgt gtc ccc tgc cac tgc tct gct gaa ggc tcc ctg cac 2125  
 Phe Pro Ser Cys Val Pro Cys His Cys Ser Ala Glu Gly Ser Leu His  
 675 680 685

gca gcc tgt gac ccc cgg agt ggg cag tgc agc tgc cgg ccc cgt gtg 2173  
 Ala Ala Cys Asp Pro Arg Ser Gly Gln Cys Ser Cys Arg Pro Arg Val  
 690 695 700

acg ggg ctg cgg tgt gac acg tgt gtg ccc ggt gcc tac aac ttc ccc 2221  
 Thr Gly Leu Arg Cys Asp Thr Cys Val Pro Gly Ala Tyr Asn Phe Pro  
 705 710 715

tac tgc gaa gct ggc tct tgc cac cct gcc ggt ctg gcc cca gtg gat 2269  
 Tyr Cys Glu Ala Gly Ser Cys His Pro Ala Gly Leu Ala Pro Val Asp  
 720 725 730

cct gcc ctt cct gag gca cag gtt ccc tgt atg tgc cgg gct cac gtg 2317  
 Pro Ala Leu Pro Glu Ala Gln Val Pro Cys Met Cys Arg Ala His Val  
 735 740 745 750

gag ggg ccg agc tgt gac cgc tgc aaa cct ggg ttc tgg gga ctg agc 2365  
 Glu Gly Pro Ser Cys Asp Arg Cys Lys Pro Gly Phe Trp Gly Leu Ser  
 755 760 765

ccc agc aac ccc gag ggc tgt acc cgc tgc agc tgc gac ctc agg ggc 2413  
 Pro Ser Asn Pro Glu Gly Cys Thr Arg Cys Ser Cys Asp Leu Arg Gly  
 770 775 780

aca ctg ggt gga gtt gct gag tgc cag ccg ggc acc ggc cag tgc ttc 2461  
 Thr Leu Gly Gly Val Ala Glu Cys Gln Pro Gly Thr Gly Gln Cys Phe  
 785 790 795

tgc aag ccc cac gtg tgc ggc cag gcc tgc gcg tcc tgc aag gat ggc 2509  
 Cys Lys Pro His Val Cys Gly Gln Ala Cys Ala Ser Cys Lys Asp Gly  
 800 805 810

ttc ttt gga ctg gat cag gct gac tat ttt ggc tgc cgc agc tgc cgg 2557



1055	1060	1065	1070	
ctg ccc cgg ccc tgc ccc acg gag cag ctc agc ccg tgc cac ccg cca				3325
Leu Pro Arg Pro Cys Pro Thr Glu Gln Leu Ser Pro Ser His Pro Pro				
	1075	1080	1085	
ctg atc acc tgc acg ggc agt gat gtg gac gtc cag ctt caa gtg gca				3373
Leu Ile Thr Cys Thr Gly Ser Asp Val Asp Val Gln Leu Gln Val Ala				
	1090	1095	1100	
gtg cca cag cca ggc cgc tat gcc cta gtg gtg gag tac gcc aat gag				3421
Val Pro Gln Pro Gly Arg Tyr Ala Leu Val Val Glu Tyr Ala Asn Glu				
	1105	1110	1115	
gat gcc cgc cag gag gtg ggc gtg gct gtg cac acc cca cag cgg gcc				3469
Asp Ala Arg Gln Glu Val Gly Val Ala Val His Thr Pro Gln Arg Ala				
	1120	1125	1130	
ccc cag cag ggg ctg ctc tcc ctg cac ccc tgc ctg tac agc acc ctg				3517
Pro Gln Gln Gly Leu Leu Ser Leu His Pro Cys Leu Tyr Ser Thr Leu				
	1135	1140	1145	1150
tgc cgg ggc act gcc cgg gat acc cag gac cac ctg gct gtc ttc cac				3565
Cys Arg Gly Thr Ala Arg Asp Thr Gln Asp His Leu Ala Val Phe His				
	1155	1160	1165	
ctg gac tgc gag gcc agc gtg agg ctc aca gcc gag cag gca cgc ttc				3613
Leu Asp Ser Glu Ala Ser Val Arg Leu Thr Ala Glu Gln Ala Arg Phe				
	1170	1175	1180	
ttc ctg cac ggg gtc act ctg gtg ccc att gag gag ttc agc ccg gag				3661
Phe Leu His Gly Val Thr Leu Val Pro Ile Glu Glu Phe Ser Pro Glu				
	1185	1190	1195	
ttc gtg gag ccc cgg gtc agc tgc atc agc agc cac ggc gcc ttt ggc				3709
Phe Val Glu Pro Arg Val Ser Cys Ile Ser Ser His Gly Ala Phe Gly				
	1200	1205	1210	
ccc aac agt gcc gcc tgt ctg ccc tgc cgc ttc cca aag ccg ccc cag				3757
Pro Asn Ser Ala Ala Cys Leu Pro Ser Arg Phe Pro Lys Pro Pro Gln				
	1215	1220	1225	1230
ccc atc atc ctc agg gac tgc cag gtg atc ccg ctg ccg ccc ggc ctc				3805
Pro Ile Ile Leu Arg Asp Cys Gln Val Ile Pro Leu Pro Pro Gly Leu				
	1235	1240	1245	
ccg ctg acc cac gcg cag gat ctc act cca gcc acg tcc cca gct gga				3853
Pro Leu Thr His Ala Gln Asp Leu Thr Pro Ala Thr Ser Pro Ala Gly				
	1250	1255	1260	
ccc cga cct cgg ccc ccc acc gct gtg gac cct gat gca gag ccc acc				3901
Pro Arg Pro Arg Pro Pro Thr Ala Val Asp Pro Asp Ala Glu Pro Thr				
	1265	1270	1275	
ctg ctg cgt gag ccc cag gcc acc gtg gtc ttc acc acc cat gtg ccc				3949
Leu Leu Arg Glu Pro Gln Ala Thr Val Val Phe Thr Thr His Val Pro				
	1280	1285	1290	
acg ctg ggc cgc tat gcc ttc ctg ctg cac ggc tac cag cca gcc cac				3997
Thr Leu Gly Arg Tyr Ala Phe Leu Leu His Gly Tyr Gln Pro Ala His				
	1295	1300	1305	1310

ccc acc ttc ccc gtg gaa gtc ctc atc aac gcc ggc cgc gtg tgg cag Pro Thr Phe Pro Val Glu Val Leu Ile Asn Ala Gly Arg Val Trp Gln 1315 1320 1325	4045
ggc cac gcc aac gcc agc ttc tgt cca cat ggc tac ggc tgc cgc acc Gly His Ala Asn Ala Ser Phe Cys Pro His Gly Tyr Gly Cys Arg Thr 1330 1335 1340	4093
ctg gtg gtg tgt gag ggc cag gcc ctg ctg gac gtg acc cac agc gag Leu Val Val Cys Glu Gly Gln Ala Leu Leu Asp Val Thr His Ser Glu 1345 1350 1355	4141
ctc act gtg acc gtg cgt gtg ccc gag ggc cgg tgg ctc tgg ctg gat Leu Thr Val Thr Val Arg Val Pro Glu Gly Arg Trp Leu Trp Leu Asp 1360 1365 1370	4189
tat gta ctc gtg gtc cct gag aac gtc tac agc ttt ggc tac ctc cgg Tyr Val Leu Val Val Pro Glu Asn Val Tyr Ser Phe Gly Tyr Leu Arg 1375 1380 1385 1390	4237
gag gag ccc ctg gat aaa tcc tat gac ttc atc agc cac tgc gca gcc Glu Glu Pro Leu Asp Lys Ser Tyr Asp Phe Ile Ser His Cys Ala Ala 1395 1400 1405	4285
cag ggc tac cac atc agc ccc agc agc tca tcc ctg ttc tgc cga aac Gln Gly Tyr His Ile Ser Pro Ser Ser Ser Ser Leu Phe Cys Arg Asn 1410 1415 1420	4333
gct gct gct tcc ctc tcc ctc ttc tat aac aac gga gcc cgt cca tgt Ala Ala Ala Ser Leu Ser Leu Phe Tyr Asn Asn Gly Ala Arg Pro Cys 1425 1430 1435	4381
ggc tgc cac gaa gta ggt gct aca ggc ccc acg tgt gag ccc ttc ggg Gly Cys His Glu Val Gly Ala Thr Gly Pro Thr Cys Glu Pro Phe Gly 1440 1445 1450	4429
ggc cag tgt ccc tgc cat gcc cat gtc att ggc cgt gac tgc tcc cgc Gly Gln Cys Pro Cys His Ala His Val Ile Gly Arg Asp Cys Ser Arg 1455 1460 1465 1470	4477
tgt gcc acc gga tac tgg ggc ttc ccc aac tgc agg ccc tgt gac tgc Cys Ala Thr Gly Tyr Trp Gly Phe Pro Asn Cys Arg Pro Cys Asp Cys 1475 1480 1485	4525
ggt gcc cgc ctc tgt gac gag ctc acg ggc cag tgc atc tgc ccg cca Gly Ala Arg Leu Cys Asp Glu Leu Thr Gly Gln Cys Ile Cys Pro Pro 1490 1495 1500	4573
cgc acc atc ccg ccc gac tgc ctg ctg tgc cag ccc cag acc ttt ggc Arg Thr Ile Pro Pro Asp Cys Leu Leu Cys Gln Pro Gln Thr Phe Gly 1505 1510 1515	4621
tgc cac ccc ctg gtc ggc tgt gag gag tgt aac tgc tca ggg ccc ggc Cys His Pro Leu Val Gly Cys Glu Glu Cys Asn Cys Ser Gly Pro Gly 1520 1525 1530	4669
atc cag gag ctc aca gac cct acc tgt gac aca gac agc ggc cag tgc Ile Gln Glu Leu Thr Asp Pro Thr Cys Asp Thr Asp Ser Gly Gln Cys 1535 1540 1545 1550	4717

aag tgc aga ccc aac gtg act ggg cgc cgc tgt gat acc tgc tct ccg	4765
Lys Cys Arg Pro Asn Val Thr Gly Arg Arg Cys Asp Thr Cys Ser Pro	
1555 1560 1565	
ggc ttc cat ggc tac ccc cgc tgc cgc ccc tgt gac tgt cac gag gcg	4813
Gly Phe His Gly Tyr Pro Arg Cys Arg Pro Cys Asp Cys His Glu Ala	
1570 1575 1580	
ggc act gcg cct ggc gtg tgt gac ccc ctc aca ggg cag tgc tac tgt	4861
Gly Thr Ala Pro Gly Val Cys Asp Pro Leu Thr Gly Gln Cys Tyr Cys	
1585 1590 1595	
aag gag aac gtg cag ggc ccc aaa tgt gac cag tgc agc ctt ggg acc	4909
Lys Glu Asn Val Gln Gly Pro Lys Cys Asp Gln Cys Ser Leu Gly Thr	
1600 1605 1610	
ttc tca ctg gat gct gcc aac ccc aaa ggt tgc acc cgc tgc ttc tgc	4957
Phe Ser Leu Asp Ala Ala Asn Pro Lys Gly Cys Thr Arg Cys Phe Cys	
1615 1620 1625 1630	
ttt ggg gcc acg gag cgc tgc cgg agc tcg tcc tac acc cgc cag gag	5005
Phe Gly Ala Thr Glu Arg Cys Arg Ser Ser Ser Tyr Thr Arg Gln Glu	
1635 1640 1645	
ttc gtg gat atg gag gga tgg gtg ctg ctg agc act gac cgg cag gtg	5053
Phe Val Asp Met Glu Gly Trp Val Leu Leu Ser Thr Asp Arg Gln Val	
1650 1655 1660	
gtg ccc cac gag cgg cag cca ggg acg gag atg ctc cgt gca gac ctg	5101
Val Pro His Glu Arg Gln Pro Gly Thr Glu Met Leu Arg Ala Asp Leu	
1665 1670 1675	
cgg cac gtg cct gag gct gtg ccc gag gct ttc ccc gag ctg tac tgg	5149
Arg His Val Pro Glu Ala Val Pro Glu Ala Phe Pro Glu Leu Tyr Trp	
1680 1685 1690	
cag gcc cca ccc tcc tac ctg ggg gac cgg gtg tca tcc tac ggt ggg	5197
Gln Ala Pro Pro Ser Tyr Leu Gly Asp Arg Val Ser Ser Tyr Gly Gly	
1695 1700 1705 1710	
acc ctc cgt tat gaa ctg cac tca gag acc cag cgg gga gat gtc ttt	5245
Thr Leu Arg Tyr Glu Leu His Ser Glu Thr Gln Arg Gly Asp Val Phe	
1715 1720 1725	
gtc ccc atg gag agc agg ccg gat gtg gtg ctg cag ggc aac cag atg	5293
Val Pro Met Glu Ser Arg Pro Asp Val Val Leu Gln Gly Asn Gln Met	
1730 1735 1740	
agc atc aca ttc ctg gag ccg gca tac ccc acg cct ggc cac gtt cac	5341
Ser Ile Thr Phe Leu Glu Pro Ala Tyr Pro Thr Pro Gly His Val His	
1745 1750 1755	
cgt ggg cag ctg cag ctg gtg gag ggg aac ttc cgg cat acg gag act	5389
Arg Gly Gln Leu Gln Leu Val Glu Gly Asn Phe Arg His Thr Glu Thr	
1760 1765 1770	
cgc aac act gtg tcc cgc gag gag ctc atg atg gtg ctg gcc agc ctg	5437
Arg Asn Thr Val Ser Arg Glu Glu Leu Met Met Val Leu Ala Ser Leu	
1775 1780 1785 1790	
gag cag ctg cag atc cgt gcc ctc ttc tca cag atc tcc tcg gct gtc	5485



Glu Gln Leu Gln Ile Arg Ala Leu Phe Ser Gln Ile Ser Ser Ala Val	
1795 1800 1805	
tcc ctg cgc agg gtg gca ctg gag gtg gcc agc cca gca ggc cag ggg	5533
Ser Leu Arg Arg Val Ala Leu Glu Val Ala Ser Pro Ala Gly Gln Gly	
1810 1815 1820	
gcc ctg gcc agc aat gtg gag ctg tgc ctg tgc ccc gcc agc tac cgg	5581
Ala Leu Ala Ser Asn Val Glu Leu Cys Leu Cys Pro Ala Ser Tyr Arg	
1825 1830 1835	
ggg gac tca tgc cag gaa tgt gcc ccc ggc ttc tat cgg gac gtc aaa	5629
Gly Asp Ser Cys Gln Glu Cys Ala Pro Gly Phe Tyr Arg Asp Val Lys	
1840 1845 1850	
ggg ctc ttc ctg ggc cga tgt gtc cct tgt cag tgc cat gga cac tca	5677
Gly Leu Phe Leu Gly Arg Cys Val Pro Cys Gln Cys His Gly His Ser	
1855 1860 1865 1870	
gac cgc tgc ctc cct ggc tct ggc gtc tgt gtg gac tgc cag cac aac	5725
Asp Arg Cys Leu Pro Gly Ser Gly Val Cys Val Asp Cys Gln His Asn	
1875 1880 1885	
acc gaa ggg gcc cac tgt gag cgc tgc cag gct ggc ttc atg agc agc	5773
Thr Glu Gly Ala His Cys Glu Arg Cys Gln Ala Gly Phe Met Ser Ser	
1890 1895 1900	
agg gac gac ccc agc gcc ccc tgt gtc agc tgc ccc tgc ccc ctc tca	5821
Arg Asp Asp Pro Ser Ala Pro Cys Val Ser Cys Pro Cys Pro Leu Ser	
1905 1910 1915	
gtg cct tcc aac aac ttc gcc gag ggc tgt gtc ctg cga ggc ggc cgc	5869
Val Pro Ser Asn Asn Phe Ala Glu Gly Cys Val Leu Arg Gly Gly Arg	
1920 1925 1930	
acc cag tgc ctc tgc aaa cct ggt tat gca ggt gcc tcc tgc gag cgg	5917
Thr Gln Cys Leu Cys Lys Pro Gly Tyr Ala Gly Ala Ser Cys Glu Arg	
1935 1940 1945 1950	
tgt gcg ccc gga ttc ttt ggg aac cca ctg gtg ctg ggc agc tcc tgc	5965
Cys Ala Pro Gly Phe Phe Gly Asn Pro Leu Val Leu Gly Ser Ser Cys	
1955 1960 1965	
cag cca tgc gac tgc agc ggc aac ggt gac ccc aac ttg ctc ttc agc	6013
Gln Pro Cys Asp Cys Ser Gly Asn Gly Asp Pro Asn Leu Leu Phe Ser	
1970 1975 1980	
gac tgc gac ccc ctg acg ggc gcc tgc cgt ggc tgc ctg cgc cac acc	6061
Asp Cys Asp Pro Leu Thr Gly Ala Cys Arg Gly Cys Leu Arg His Thr	
1985 1990 1995	
act ggg ccc cgc tgc gag atc tgt gcc ccc ggc ttc tac ggc aac gcc	6109
Thr Gly Pro Arg Cys Glu Ile Cys Ala Pro Gly Phe Tyr Gly Asn Ala	
2000 2005 2010	
ctg ctg ccc ggc aac tgc acc cgg tgc gac tgt acc cca tgt ggg aca	6157
Leu Leu Pro Gly Asn Cys Thr Arg Cys Asp Cys Thr Pro Cys Gly Thr	
2015 2020 2025 2030	
gag gcc tgc gac ccc cac agc ggg cac tgc ctg tgc aag gcg ggc gtg	6205
Glu Ala Cys Asp Pro His Ser Gly His Cys Leu Cys Lys Ala Gly Val	

2035	2040	2045	
act ggg cgg cgc tgt gac cgc tgc cag gag gga cat ttt ggt ttc aat			6253
Thr Gly Arg Arg Cys Asp Arg Cys Gln Glu Gly His Phe Gly Phe Asn			
2050	2055	2060	
ggc tgc ggg ggc tgc cgc ccg tgt gct tgt gga ccg gcc gcc gag ggc			6301
Gly Cys Gly Gly Cys Arg Pro Cys Ala Cys Gly Pro Ala Ala Glu Gly			
2065	2070	2075	
tcc gag tgc cac ccc cag agc gga cag tgc cac tgc cga cca ggg acc			6349
Ser Glu Cys His Pro Gln Ser Gly Gln Cys His Cys Arg Pro Gly Thr			
2080	2085	2090	
atg gga ccc cag tgc cgc gag tgt gcc cct ggc tac tgg ggg ctc cct			6397
Met Gly Pro Gln Cys Arg Glu Cys Ala Pro Gly Tyr Trp Gly Leu Pro			
2095	2100	2105	2110
gag cag ggc tgc agg cgc tgc cag tgc cct ggg ggc cgc tgt gac cct			6445
Glu Gln Gly Cys Arg Arg Cys Gln Cys Pro Gly Gly Arg Cys Asp Pro			
2115	2120	2125	
cac acg ggc cgc tgc aac tgc ccc ccg ggg ctc agc ggg gag cgc tgc			6493
His Thr Gly Arg Cys Asn Cys Pro Pro Gly Leu Ser Gly Glu Arg Cys			
2130	2135	2140	
gac acc tgc agc cag cag cat cag gtg cct gtt cca ggc ggg cct gtg			6541
Asp Thr Cys Ser Gln Gln His Gln Val Pro Val Pro Gly Gly Pro Val			
2145	2150	2155	
ggc cac agc atc cac tgt gaa gtg tgt gac cac tgt gtg gtc ctg ctc			6589
Gly His Ser Ile His Cys Glu Val Cys Asp His Cys Val Val Leu Leu			
2160	2165	2170	
ctg gat gac ctg gaa ccg gcc ggc gcc ctc ctc ccc gcc att cac gag			6637
Leu Asp Asp Leu Glu Arg Ala Gly Ala Leu Leu Pro Ala Ile His Glu			
2175	2180	2185	2190
caa ctg cgt ggc atc aat gcc agc tcc atg gcc tgg gcc cgt ctg cac			6685
Gln Leu Arg Gly Ile Asn Ala Ser Ser Met Ala Trp Ala Arg Leu His			
2195	2200	2205	
agg ctg aac gcc tcc atc gct gac ctg cag agc cag ctc cgg agc ccc			6733
Arg Leu Asn Ala Ser Ile Ala Asp Leu Gln Ser Gln Leu Arg Ser Pro			
2210	2215	2220	
ctg ggc ccc cgc cat gag acg gca cag cag ctg gag gtg ctg gag cag			6781
Leu Gly Pro Arg His Glu Thr Ala Gln Gln Leu Glu Val Leu Glu Gln			
2225	2230	2235	
cag agc aca agc ctc ggg cag gac gca ccg ccg cta ggc ggc cag gcc			6829
Gln Ser Thr Ser Leu Gly Gln Asp Ala Arg Arg Leu Gly Gly Gln Ala			
2240	2245	2250	
gtg ggg acc cga gac cag gcg agc caa ttg ctg gcc ggc acc gag gcc			6877
Val Gly Thr Arg Asp Gln Ala Ser Gln Leu Leu Ala Gly Thr Glu Ala			
2255	2260	2265	2270
aca ctg ggc cat gcg aag acg ctg ttg gcg gcc atc ccg gct gtg gac			6925
Thr Leu Gly His Ala Lys Thr Leu Leu Ala Ala Ile Arg Ala Val Asp			
2275	2280	2285	

cgc acc ctg agc gag ctc atg tcc cag acg ggc cac ctg ggg ctg gcc Arg Thr Leu Ser Glu Leu Met Ser Gln Thr Gly His Leu Gly Leu Ala 2290 2295 2300	6973
aat gcc tgc gct cca tca ggt gag cag ctg ctc cgg aca ctg gcc gag Asn Ala Ser Ala Pro Ser Gly Glu Gln Leu Leu Arg Thr Leu Ala Glu 2305 2310 2315	7021
gtg gag cgg ctg ctc tgg gag atg cgg gcc cgg gac ctg ggg gcc ccg Val Glu Arg Leu Leu Trp Glu Met Arg Ala Arg Asp Leu Gly Ala Pro 2320 2325 2330	7069
cag gca gca gct gag gct gag ttg gct gca gca cag aga ttg ctg gcc Gln Ala Ala Ala Glu Ala Glu Leu Ala Ala Ala Gln Arg Leu Leu Ala 2335 2340 2345 2350	7117
cgg gtg cag gag cag ctg agc agc ctc tgg gag gag aac cag gca ctg Arg Val Gln Glu Gln Leu Ser Ser Leu Trp Glu Glu Asn Gln Ala Leu 2355 2360 2365	7165
gcc aca caa acc cgc gac cgg ctg gcc cag cac gag gcc ggc ctc atg Ala Thr Gln Thr Arg Asp Arg Leu Ala Gln His Glu Ala Gly Leu Met 2370 2375 2380	7213
gac ctg cga gag gct ttg aac cgg gca gtg gac gcc aca cgg gag gcc Asp Leu Arg Glu Ala Leu Asn Arg Ala Val Asp Ala Thr Arg Glu Ala 2385 2390 2395	7261
cag gag ctc aac agc cgc aac cag gag cgc ctg gag gaa gcc ctg caa Gln Glu Leu Asn Ser Arg Asn Gln Glu Arg Leu Glu Glu Ala Leu Gln 2400 2405 2410	7309
agg aag cag gag ctg tcc cgg gac aat gcc acc ctg cag gcc act ctg Arg Lys Gln Glu Leu Ser Arg Asp Asn Ala Thr Leu Gln Ala Thr Leu 2415 2420 2425 2430	7357
cat gcg gct agg gac acc ctg gcc agc gtc ttc aga ttg ctg cac agc His Ala Ala Arg Asp Thr Leu Ala Ser Val Phe Arg Leu Leu His Ser 2435 2440 2445	7405
ctg gac cag gct aag gag gag ctg gag cgc ctc gcc gcc agc ctg gac Leu Asp Gln Ala Lys Glu Glu Leu Glu Arg Leu Ala Ala Ser Leu Asp 2450 2455 2460	7453
ggg gct cgg acc cca ctg ctg cag agg atg cag acc ttc tcc ccg gcg Gly Ala Arg Thr Pro Leu Leu Gln Arg Met Gln Thr Phe Ser Pro Ala 2465 2470 2475	7501
ggc agc aag ctg cgt cta gtg gag gcc gcc gag gcc cac gca cag cag Gly Ser Lys Leu Arg Leu Val Glu Ala Ala Glu Ala His Ala Gln Gln 2480 2485 2490	7549
ctg ggc cag ctg gca ctc aat ctg tcc agc atc atc ctg gac gtc aac Leu Gly Gln Leu Ala Leu Asn Leu Ser Ser Ile Ile Leu Asp Val Asn 2495 2500 2505 2510	7597
cag gac cgc ctc acc cag agg gcc atc gag gcc tcc aac gcc tac agc Gln Asp Arg Leu Thr Gln Arg Ala Ile Glu Ala Ser Asn Ala Tyr Ser 2515 2520 2525	7645

cgC atC ctg cag gcc gtg cag gct gcc gag gat gct gct ggc cag gcc	7693
Arg Ile Leu Gln Ala Val Gln Ala Ala Glu Asp Ala Ala Gly Gln Ala	
2530 2535 2540	
ctg cag cag gcg gac cac acg tgg gcg acg gtg gtg cgg cag gcc ctg	7741
Leu Gln Gln Ala Asp His Thr Trp Ala Thr Val Val Arg Gln Gly Leu	
2545 2550 2555	
gtg gac cga gcc cag cag ctC ctg gcc aac agC act gca ctA gaa gag	7789
Val Asp Arg Ala Gln Gln Leu Leu Ala Asn Ser Thr Ala Leu Glu Glu	
2560 2565 2570	
gcc atg ctC cag gaa cag cag agg ctg ggc ctT gtg tgg gct gcc ctC	7837
Ala Met Leu Gln Glu Gln Gln Arg Leu Gly Leu Val Trp Ala Ala Leu	
2575 2580 2585 2590	
cag ggt gcc agg acc cag ctC cga gat gtc cgg gcc aag aag gac cag	7885
Gln Gly Ala Arg Thr Gln Leu Arg Asp Val Arg Ala Lys Lys Asp Gln	
2595 2600 2605	
ctg gag gcg cac atC cag gcg gcg cag gcc atg ctT gcc atg gac aca	7933
Leu Glu Ala His Ile Gln Ala Ala Gln Ala Met Leu Ala Met Asp Thr	
2610 2615 2620	
gac gag aca agC aag aag atC gca cat gcc aag gct gtg gct gct gaa	7981
Asp Glu Thr Ser Lys Lys Ile Ala His Ala Lys Ala Val Ala Ala Glu	
2625 2630 2635	
gcc cag gac acc gcc acc cgt gtg cag tcc cag ctg cag gcc atg cag	8029
Ala Gln Asp Thr Ala Thr Arg Val Gln Ser Gln Leu Gln Ala Met Gln	
2640 2645 2650	
gag aat gtg gag cgg tgg cag ggc cag tac gag ggc ctg cgg ggc cag	8077
Glu Asn Val Glu Arg Trp Gln Gly Gln Tyr Glu Gly Leu Arg Gly Gln	
2655 2660 2665 2670	
gac ctg ggc cag gca gtg ctT gac gca ggc cac tca gtg tcc acc ctg	8125
Asp Leu Gly Gln Ala Val Leu Asp Ala Gly His Ser Val Ser Thr Leu	
2675 2680 2685	
gag aag acg ctg ccc cag ctg ctg gcc aag ctg agC atC ctg gag aac	8173
Glu Lys Thr Leu Pro Gln Leu Leu Ala Lys Leu Ser Ile Leu Glu Asn	
2690 2695 2700	
cgt ggg gtg cac aac gcc agC ctg gcc ctg tcc gcc agC att ggc cgc	8221
Arg Gly Val His Asn Ala Ser Leu Ala Leu Ser Ala Ser Ile Gly Arg	
2705 2710 2715	
gtg cga gag ctC att gcc cag gcc cgg ggg gct gcc agt aag gtc aag	8269
Val Arg Glu Leu Ile Ala Gln Ala Arg Gly Ala Ala Ser Lys Val Lys	
2720 2725 2730	
gtg ccc atg aag ttc aac ggg cgc tca ggg gtg cag ctg cgc acc cca	8317
Val Pro Met Lys Phe Asn Gly Arg Ser Gly Val Gln Leu Arg Thr Pro	
2735 2740 2745 2750	
cgg gat ctT gcc gac ctT gct gcc tac act gcc ctC aag ttc tac ctg	8365
Arg Asp Leu Ala Asp Leu Ala Ala Tyr Thr Ala Leu Lys Phe Tyr Leu	
2755 2760 2765	
cag ggc cca gag cct gag cct ggg cag ggt acc gag gat cgc ttt gtg	8413

Gln Gly Pro Glu Pro Glu Pro Gly Gln Gly Thr Glu Asp Arg Phe Val	
2770 2775 2780	
atg tac atg ggc agc cgc cag gcc act ggg gac tac atg ggt gtg tct	8461
Met Tyr Met Gly Ser Arg Gln Ala Thr Gly Asp Tyr Met Gly Val Ser	
2785 2790 2795	
ctg cgt gac aag aag gtg cac tgg gtg tat cag ctg ggt gag gcg ggc	8509
Leu Arg Asp Lys Lys Val His Trp Val Tyr Gln Leu Gly Glu Ala Gly	
2800 2805 2810	
cct gca gtc cta agc atc gat gag gac att ggg gag cag ttc gca gct	8557
Pro Ala Val Leu Ser Ile Asp Glu Asp Ile Gly Glu Gln Phe Ala Ala	
2815 2820 2825 2830	
gtc agc ctg gac agg act ctc cag ttt ggc cac atg tcc gtc aca gtg	8605
Val Ser Leu Asp Arg Thr Leu Gln Phe Gly His Met Ser Val Thr Val	
2835 2840 2845	
gag aga cag atg atc cag gaa acc aag ggt gac acg gtg gcc cct ggg	8653
Glu Arg Gln Met Ile Gln Glu Thr Lys Gly Asp Thr Val Ala Pro Gly	
2850 2855 2860	
gca gag ggg ctg ctc aac ctg cgg cca gac gac ttc gtc ttc tac gtc	8701
Ala Glu Gly Leu Leu Asn Leu Arg Pro Asp Asp Phe Val Phe Tyr Val	
2865 2870 2875	
ggg ggg tac ccc agt acc ttc acg ccc cct ccc ctg ctt cgc ttc ccc	8749
Gly Gly Tyr Pro Ser Thr Phe Thr Pro Pro Pro Leu Leu Arg Phe Pro	
2880 2885 2890	
ggc tac cgg ggc tgc atc gag atg gac acg ctg aat gag gag gtg gtc	8797
Gly Tyr Arg Gly Cys Ile Glu Met Asp Thr Leu Asn Glu Glu Val Val	
2895 2900 2905 2910	
agc ctc tac aac ttc gag agg acc ttc cag ctg gac acg gct gtg gac	8845
Ser Leu Tyr Asn Phe Glu Arg Thr Phe Gln Leu Asp Thr Ala Val Asp	
2915 2920 2925	
agg cct tgt gcc cgc tcc aag tcg acc ggg gac ccg tgg ctc acg gac	8893
Arg Pro Cys Ala Arg Ser Lys Ser Thr Gly Asp Pro Trp Leu Thr Asp	
2930 2935 2940	
ggc tcc tac ctg gac ggc acc ggc ttc gcc cgc atc agc ttc gac agt	8941
Gly Ser Tyr Leu Asp Gly Thr Gly Phe Ala Arg Ile Ser Phe Asp Ser	
2945 2950 2955	
cag atc agc acc acc aag cgc ttc gag cag gag ctg cgg ctc gtg tcc	8989
Gln Ile Ser Thr Thr Lys Arg Phe Glu Gln Glu Leu Arg Leu Val Ser	
2960 2965 2970	
tac agc ggg gtg ctc ttc ttc ctg aag cag cag agc cag ttc ctg tgc	9037
Tyr Ser Gly Val Leu Phe Phe Leu Lys Gln Gln Ser Gln Phe Leu Cys	
2975 2980 2985 2990	
ttg gcc gtg caa gaa ggc agc ctc gtg ctg ttg tat gac ttt ggg gct	9085
Leu Ala Val Gln Glu Gly Ser Leu Val Leu Leu Tyr Asp Phe Gly Ala	
2995 3000 3005	
ggc ctg aaa aag gcc gtc cca ctg cag ccc cca ccg ccc ctg acc tcg	9133
Gly Leu Lys Lys Ala Val Pro Leu Gln Pro Pro Pro Pro Leu Thr Ser	

3010	3015	3020	
gcc agc aag gcg atc cag gtg ttc ctg ctg ggg ggc agc cgc aag cgt Ala Ser Lys Ala Ile Gln Val Phe Leu Leu Gly Gly Ser Arg Lys Arg 3025 3030 3035			9181
gtg ctg gtg cgt gtg gag cgg gcc acg gtg tac agc gtg gag cag gac Val Leu Val Arg Val Glu Arg Ala Thr Val Tyr Ser Val Glu Gln Asp 3040 3045 3050			9229
aat gat ctg gag ctg gcc gac gcc tac tac ctg ggg ggc gtg ccg ccc Asn Asp Leu Glu Leu Ala Asp Ala Tyr Tyr Leu Gly Gly Val Pro Pro 3055 3060 3065 3070			9277
gac cag ctg ccc ccg agc ctg cga tgg ctc ttc ccc acc gga ggc tca Asp Gln Leu Pro Pro Ser Leu Arg Trp Leu Phe Pro Thr Gly Gly Ser 3075 3080 3085			9325
gtc cgt ggc tgc gtc aaa ggc atc aag gcc ctg ggc aag tat gtg gac Val Arg Gly Cys Val Lys Gly Ile Lys Ala Leu Gly Lys Tyr Val Asp 3090 3095 3100			9373
ctc aag cgg ctg aac acg aca ggc gtg agc gcc ggc tgc acc gcc gac Leu Lys Arg Leu Asn Thr Thr Gly Val Ser Ala Gly Cys Thr Ala Asp 3105 3110 3115			9421
ctg ctg gtg ggg cgc gcc atg act ttc cat ggc cac ggc ttc ctt cgc Leu Leu Val Gly Arg Ala Met Thr Phe His Gly His Gly Phe Leu Arg 3120 3125 3130			9469
ctg gcg ctc tcg aac gtg gca ccg ctc act ggc aac gtc tac tcc ggc Leu Ala Leu Ser Asn Val Ala Pro Leu Thr Gly Asn Val Tyr Ser Gly 3135 3140 3145 3150			9517
ttc ggc ttc cac agc gcc cag gac agt gcc ctg ctc tac tac cgg gcg Phe Gly Phe His Ser Ala Gln Asp Ser Ala Leu Leu Tyr Tyr Arg Ala 3155 3160 3165			9565
tcc ccg gat ggg cta tgc cag gtg tcc ctg cag cag ggc cgt gtg agc Ser Pro Asp Gly Leu Cys Gln Val Ser Leu Gln Gln Gly Arg Val Ser 3170 3175 3180			9613
cta cag ctc ctg agg act gaa gtg aaa act caa gcg ggc ttc gcc gat Leu Gln Leu Leu Arg Thr Glu Val Lys Thr Gln Ala Gly Phe Ala Asp 3185 3190 3195			9661
ggt gcc ccc cat tac gtc gcc ttc tac agc aat gcc acg gga gtc tgg Gly Ala Pro His Tyr Val Ala Phe Tyr Ser Asn Ala Thr Gly Val Trp 3200 3205 3210			9709
ctg tat gtc gat gac cag ctc cag cag atg aag ccc cac cgg gga cca Leu Tyr Val Asp Asp Gln Leu Gln Gln Met Lys Pro His Arg Gly Pro 3215 3220 3225 3230			9757
ccc ccc gag ctc cag ccg cag cct gag ggg ccc ccg agg ctc ctc ctg Pro Pro Glu Leu Gln Pro Gln Pro Glu Gly Pro Pro Arg Leu Leu Leu 3235 3240 3245			9805
gga ggc ctg cct gag tct ggc acc att tac aac ttc agt ggc tgc atc Gly Gly Leu Pro Glu Ser Gly Thr Ile Tyr Asn Phe Ser Gly Cys Ile 3250 3255 3260			9853



gcc ccc aca cgg atg gca ggg gtc aca ccc tgc atc ttg ggc ccc ctg 10621  
Ala Pro Thr Arg Met Ala Gly Val Thr Pro Cys Ile Leu Gly Pro Leu  
3505 3510 3515

gag gcg ggc ctg ttc ttc cca ggc agc ggg gga gtt atc act tta gac 10669  
Glu Ala Gly Leu Phe Phe Pro Gly Ser Gly Gly Val Ile Thr Leu Asp  
3520 3525 3530

ctc cca gga gct aca ctg cct gat gtg ggc ctg gaa ctg gag gtg cgg 10717  
Leu Pro Gly Ala Thr Leu Pro Asp Val Gly Leu Glu Leu Glu Val Arg  
3535 3540 3545 3550

ccc ctg gca gtc acc gga ctg atc ttc cac ttg ggc cag gcc cgg acg 10765  
Pro Leu Ala Val Thr Gly Leu Ile Phe His Leu Gly Gln Ala Arg Thr  
3555 3560 3565

ccc ccc tac ttg cag ttg cag gtg acc gag aag caa gtc ctg ctg cgg 10813  
Pro Pro Tyr Leu Gln Leu Gln Val Thr Glu Lys Gln Val Leu Leu Arg  
3570 3575 3580

gcg gat gac gga gca ggg gag ttc tcc acg tca gtg acc cgc ccc tca 10861  
Ala Asp Asp Gly Ala Gly Glu Phe Ser Thr Ser Val Thr Arg Pro Ser  
3585 3590 3595

gtg ctg tgt gat ggc cag tgg cac cgg cta gcg gtg atg aaa agc ggg 10909  
Val Leu Cys Asp Gly Gln Trp His Arg Leu Ala Val Met Lys Ser Gly  
3600 3605 3610

aat gtg ctc cgg ctg gag gtg gac gcg cag agc aac cac acc gtg ggc 10957  
Asn Val Leu Arg Leu Glu Val Asp Ala Gln Ser Asn His Thr Val Gly  
3615 3620 3625 3630

ccc ttg ctg gcg gct gca gct ggt gcc cca gcc cct ctg tac ctc ggg 11005  
Pro Leu Leu Ala Ala Ala Ala Gly Ala Pro Ala Pro Leu Tyr Leu Gly  
3635 3640 3645

ggc ctg cct gag ccc atg gcc gtg cag ccc tgg ccc ccc gcc tac tgc 11053  
Gly Leu Pro Glu Pro Met Ala Val Gln Pro Trp Pro Pro Ala Tyr Cys  
3650 3655 3660

ggc tgc atg agg agg ctg gcg gtg aac cgg tcc ccc gtc gcc atg act 11101  
Gly Cys Met Arg Arg Leu Ala Val Asn Arg Ser Pro Val Ala Met Thr  
3665 3670 3675

cgc tct gtg gag gtc cac ggg gca gtg ggg gcc agt ggc tgc cca gcc 11149  
Arg Ser Val Glu Val His Gly Ala Val Gly Ala Ser Gly Cys Pro Ala  
3680 3685 3690

gcc taggacacag ccaaccccgagg cccctggtca ggcccctgca gctgctcac 11202  
Ala  
3695

accgcccctt gtgctcgct cataggtgtc tatttggaact ctaagctcta cgggtgacag 11262

atcttgtttc tgaagatggt ttaagttata gcttcttaaa cgaaagaata aaatactgca 11322

aaatgccgga attcgatatc aagcttat 11350

<210> 2  
<211> 3695



<212> PRT  
 <213> Homo sapiens

<400> 2

```

Met Ala Lys Arg Leu Cys Ala Gly Ser Ala Leu Cys Val Arg Gly Pro
 1          5          10          15

Arg Gly Pro Ala Pro Leu Leu Leu Val Gly Leu Ala Leu Leu Gly Ala
          20          25          30

Ala Arg Ala Arg Glu Glu Ala Gly Gly Gly Phe Ser Leu His Pro Pro
          35          40          45

Tyr Phe Asn Leu Ala Glu Gly Ala Arg Ile Ala Ala Ser Ala Thr Cys
          50          55          60

Gly Glu Glu Ala Pro Ala Arg Gly Ser Pro Arg Pro Thr Glu Asp Leu
          65          70          75          80

Tyr Cys Lys Leu Val Gly Gly Pro Val Ala Gly Gly Asp Pro Asn Gln
          85          90          95

Thr Ile Arg Gly Gln Tyr Cys Asp Ile Cys Thr Ala Ala Asn Ser Asn
          100          105          110

Lys Ala His Pro Ala Ser Asn Ala Ile Asp Gly Thr Glu Arg Trp Trp
          115          120          125

Gln Ser Pro Pro Leu Ser Arg Gly Leu Glu Tyr Asn Glu Val Asn Val
          130          135          140

Thr Leu Asp Leu Gly Gln Val Phe His Val Ala Tyr Val Leu Ile Lys
          145          150          155          160

Phe Ala Asn Ser Pro Arg Pro Asp Leu Trp Val Leu Glu Arg Ser Met
          165          170          175

Asp Phe Gly Arg Thr Tyr Gln Pro Trp Gln Phe Phe Ala Ser Ser Lys
          180          185          190

Arg Asp Cys Leu Glu Arg Phe Gly Pro Gln Thr Leu Glu Arg Ile Thr
          195          200          205

Arg Asp Asp Ala Ala Ile Cys Thr Thr Glu Tyr Ser Arg Ile Val Pro
          210          215          220

Leu Glu Asn Gly Glu Ile Val Val Ser Leu Val Asn Gly Arg Pro Gly
          225          230          235          240

Ala Met Asn Phe Ser Tyr Ser Pro Leu Leu Arg Glu Phe Thr Lys Ala
          245          250          255

Thr Asn Val Arg Leu Arg Phe Leu Arg Thr Asn Thr Leu Leu Gly His
          260          265          270

Leu Met Gly Lys Ala Leu Arg Asp Pro Thr Val Thr Arg Arg Tyr Tyr
          275          280          285

Tyr Ser Ile Lys Asp Ile Ser Ile Gly Gly Arg Cys Val Cys His Gly
          290          295          300

```

His Ala Asp Ala Cys Asp Ala Lys Asp Pro Thr Asp Pro Phe Arg Leu  
 305 310 315 320  
 Gln Cys Thr Cys Gln His Asn Thr Cys Gly Gly Thr Cys Asp Arg Cys  
 325 330 335  
 Cys Pro Gly Phe Asn Gln Gln Pro Trp Lys Pro Ala Thr Ala Asn Ser  
 340 345 350  
 Ala Asn Glu Cys Gln Ser Cys Asn Cys Tyr Gly His Ala Thr Asp Cys  
 355 360 365  
 Tyr Tyr Asp Pro Glu Val Asp Arg Arg Arg Ala Ser Gln Ser Leu Asp  
 370 375 380  
 Gly Thr Tyr Gln Gly Gly Gly Val Cys Ile Asp Cys Gln His His Thr  
 385 390 395 400  
 Ala Gly Val Asn Cys Glu Arg Cys Leu Pro Gly Phe Tyr Arg Ser Pro  
 405 410 415  
 Asn His Pro Leu Asp Ser Pro His Val Cys Arg Arg Cys Asn Cys Glu  
 420 425 430  
 Ser Asp Phe Thr Asp Gly Thr Cys Glu Asp Leu Thr Gly Arg Cys Tyr  
 435 440 445  
 Cys Arg Pro Asn Phe Ser Gly Glu Arg Cys Asp Val Cys Ala Glu Gly  
 450 455 460  
 Phe Thr Gly Phe Pro Ser Cys Tyr Pro Thr Pro Ser Ser Ser Asn Asp  
 465 470 475 480  
 Thr Arg Glu Gln Val Leu Pro Ala Gly Gln Ile Val Asn Cys Asp Cys  
 485 490 495  
 Ser Ala Ala Gly Thr Gln Gly Asn Ala Cys Arg Lys Asp Pro Arg Val  
 500 505 510  
 Gly Arg Cys Leu Cys Lys Pro Asn Phe Gln Gly Thr His Cys Glu Leu  
 515 520 525  
 Cys Ala Pro Gly Phe Tyr Gly Pro Gly Cys Gln Pro Cys Gln Cys Ser  
 530 535 540  
 Ser Pro Gly Val Ala Asp Asp Arg Cys Asp Pro Asp Thr Gly Gln Cys  
 545 550 555 560  
 Arg Cys Arg Val Gly Phe Glu Gly Ala Thr Cys Asp Arg Cys Ala Pro  
 565 570 575  
 Gly Tyr Phe His Phe Pro Leu Cys Gln Leu Cys Gly Cys Ser Pro Ala  
 580 585 590  
 Gly Thr Leu Pro Glu Gly Cys Asp Glu Ala Gly Arg Cys Leu Cys Gln  
 595 600 605  
 Pro Glu Phe Ala Gly Pro His Cys Asp Arg Cys Arg Pro Gly Tyr His  
 610 615 620  
 Gly Phe Pro Asn Cys Gln Ala Cys Thr Cys Asp Pro Arg Gly Ala Leu

625	630	635	640
Asp Gln Leu Cys Gly Ala Gly Gly Leu Cys Arg Cys Arg Pro Gly Tyr			
645	650	655	
Thr Gly Thr Ala Cys Gln Glu Cys Ser Pro Gly Phe His Gly Phe Pro			
660	665	670	
Ser Cys Val Pro Cys His Cys Ser Ala Glu Gly Ser Leu His Ala Ala			
675	680	685	
Cys Asp Pro Arg Ser Gly Gln Cys Ser Cys Arg Pro Arg Val Thr Gly			
690	695	700	
Leu Arg Cys Asp Thr Cys Val Pro Gly Ala Tyr Asn Phe Pro Tyr Cys			
705	710	715	720
Glu Ala Gly Ser Cys His Pro Ala Gly Leu Ala Pro Val Asp Pro Ala			
725	730	735	
Leu Pro Glu Ala Gln Val Pro Cys Met Cys Arg Ala His Val Glu Gly			
740	745	750	
Pro Ser Cys Asp Arg Cys Lys Pro Gly Phe Trp Gly Leu Ser Pro Ser			
755	760	765	
Asn Pro Glu Gly Cys Thr Arg Cys Ser Cys Asp Leu Arg Gly Thr Leu			
770	775	780	
Gly Gly Val Ala Glu Cys Gln Pro Gly Thr Gly Gln Cys Phe Cys Lys			
785	790	795	800
Pro His Val Cys Gly Gln Ala Cys Ala Ser Cys Lys Asp Gly Phe Phe			
805	810	815	
Gly Leu Asp Gln Ala Asp Tyr Phe Gly Cys Arg Ser Cys Arg Cys Asp			
820	825	830	
Ile Gly Gly Ala Leu Gly Gln Ser Cys Glu Pro Arg Thr Gly Val Cys			
835	840	845	
Arg Cys Arg Pro Asn Thr Gln Gly Pro Thr Cys Ser Glu Pro Ala Arg			
850	855	860	
Asp His Tyr Leu Pro Asp Leu His His Leu Arg Leu Glu Leu Glu Glu			
865	870	875	880
Ala Ala Thr Pro Glu Gly His Ala Val Arg Phe Gly Phe Asn Pro Leu			
885	890	895	
Glu Phe Glu Asn Phe Ser Trp Arg Gly Tyr Ala Gln Met Ala Pro Val			
900	905	910	
Gln Pro Arg Ile Val Ala Arg Leu Asn Leu Thr Ser Pro Asp Leu Phe			
915	920	925	
Trp Leu Val Phe Arg Tyr Val Asn Arg Gly Ala Met Ser Val Ser Gly			
930	935	940	
Arg Val Ser Val Arg Glu Glu Gly Arg Ser Ala Ala Cys Ala Asn Cys			
945	950	955	960

Thr	Ala	Gln	Ser	Gln	Pro	Val	Ala	Phe	Pro	Pro	Ser	Thr	Glu	Pro	Ala		
				965					970					975			
Phe	Ile	Thr	Val	Pro	Gln	Arg	Gly	Phe	Gly	Glu	Pro	Phe	Val	Leu	Asn		
			980					985					990				
Pro	Gly	Thr	Trp	Ala	Leu	Arg	Val	Glu	Ala	Glu	Gly	Val	Leu	Leu	Asp		
		995					1000					1005					
Tyr	Val	Val	Leu	Leu	Pro	Ser	Ala	Tyr	Tyr	Glu	Ala	Ala	Leu	Leu	Gln		
	1010					1015					1020						
Leu	Arg	Val	Thr	Glu	Ala	Cys	Thr	Tyr	Arg	Pro	Ser	Ala	Gln	Gln	Ser		
1025						1030				1035				1040			
Gly	Asp	Asn	Cys	Leu	Tyr	Thr	His	Leu	Pro	Leu	Asp	Gly	Phe	Pro			
			1045					1050					1055				
Ser	Ala	Ala	Gly	Leu	Glu	Ala	Leu	Cys	Arg	Gln	Asp	Asn	Ser	Leu	Pro		
			1060					1065					1070				
Arg	Pro	Cys	Pro	Thr	Glu	Gln	Leu	Ser	Pro	Ser	His	Pro	Pro	Leu	Ile		
			1075				1080					1085					
Thr	Cys	Thr	Gly	Ser	Asp	Val	Asp	Val	Gln	Leu	Gln	Val	Ala	Val	Pro		
	1090					1095					1100						
Gln	Pro	Gly	Arg	Tyr	Ala	Leu	Val	Val	Glu	Tyr	Ala	Asn	Glu	Asp	Ala		
1105						1110				1115				1120			
Arg	Gln	Glu	Val	Gly	Val	Ala	Val	His	Thr	Pro	Gln	Arg	Ala	Pro	Gln		
			1125					1130					1135				
Gln	Gly	Leu	Leu	Ser	Leu	His	Pro	Cys	Leu	Tyr	Ser	Thr	Leu	Cys	Arg		
		1140					1145						1150				
Gly	Thr	Ala	Arg	Asp	Thr	Gln	Asp	His	Leu	Ala	Val	Phe	His	Leu	Asp		
	1155					1160						1165					
Ser	Glu	Ala	Ser	Val	Arg	Leu	Thr	Ala	Glu	Gln	Ala	Arg	Phe	Phe	Leu		
	1170					1175						1180					
His	Gly	Val	Thr	Leu	Val	Pro	Ile	Glu	Glu	Phe	Ser	Pro	Glu	Phe	Val		
1185					1190					1195				1200			
Glu	Pro	Arg	Val	Ser	Cys	Ile	Ser	Ser	His	Gly	Ala	Phe	Gly	Pro	Asn		
			1205						1210					1215			
Ser	Ala	Ala	Cys	Leu	Pro	Ser	Arg	Phe	Pro	Lys	Pro	Pro	Gln	Pro	Ile		
			1220					1225					1230				
Ile	Leu	Arg	Asp	Cys	Gln	Val	Ile	Pro	Leu	Pro	Pro	Gly	Leu	Pro	Leu		
	1235						1240						1245				
Thr	His	Ala	Gln	Asp	Leu	Thr	Pro	Ala	Thr	Ser	Pro	Ala	Gly	Pro	Arg		
	1250					1255						1260					
Pro	Arg	Pro	Pro	Thr	Ala	Val	Asp	Pro	Asp	Ala	Glu	Pro	Thr	Leu	Leu		
1265					1270					1275				1280			

Arg Glu Pro Gln Ala Thr Val Val Phe Thr Thr His Val Pro Thr Leu  
 1285 1290 1295  
 Gly Arg Tyr Ala Phe Leu Leu His Gly Tyr Gln Pro Ala His Pro Thr  
 1300 1305 1310  
 Phe Pro Val Glu Val Leu Ile Asn Ala Gly Arg Val Trp Gln Gly His  
 1315 1320 1325  
 Ala Asn Ala Ser Phe Cys Pro His Gly Tyr Gly Cys Arg Thr Leu Val  
 1330 1335 1340  
 Val Cys Glu Gly Gln Ala Leu Leu Asp Val Thr His Ser Glu Leu Thr  
 1345 1350 1355 1360  
 Val Thr Val Arg Val Pro Glu Gly Arg Trp Leu Trp Leu Asp Tyr Val  
 1365 1370 1375  
 Leu Val Val Pro Glu Asn Val Tyr Ser Phe Gly Tyr Leu Arg Glu Glu  
 1380 1385 1390  
 Pro Leu Asp Lys Ser Tyr Asp Phe Ile Ser His Cys Ala Ala Gln Gly  
 1395 1400 1405  
 Tyr His Ile Ser Pro Ser Ser Ser Ser Leu Phe Cys Arg Asn Ala Ala  
 1410 1415 1420  
 Ala Ser Leu Ser Leu Phe Tyr Asn Asn Gly Ala Arg Pro Cys Gly Cys  
 1425 1430 1435 1440  
 His Glu Val Gly Ala Thr Gly Pro Thr Cys Glu Pro Phe Gly Gly Gln  
 1445 1450 1455  
 Cys Pro Cys His Ala His Val Ile Gly Arg Asp Cys Ser Arg Cys Ala  
 1460 1465 1470  
 Thr Gly Tyr Trp Gly Phe Pro Asn Cys Arg Pro Cys Asp Cys Gly Ala  
 1475 1480 1485  
 Arg Leu Cys Asp Glu Leu Thr Gly Gln Cys Ile Cys Pro Pro Arg Thr  
 1490 1495 1500  
 Ile Pro Pro Asp Cys Leu Leu Cys Gln Pro Gln Thr Phe Gly Cys His  
 1505 1510 1515 1520  
 Pro Leu Val Gly Cys Glu Glu Cys Asn Cys Ser Gly Pro Gly Ile Gln  
 1525 1530 1535  
 Glu Leu Thr Asp Pro Thr Cys Asp Thr Asp Ser Gly Gln Cys Lys Cys  
 1540 1545 1550  
 Arg Pro Asn Val Thr Gly Arg Arg Cys Asp Thr Cys Ser Pro Gly Phe  
 1555 1560 1565  
 His Gly Tyr Pro Arg Cys Arg Pro Cys Asp Cys His Glu Ala Gly Thr  
 1570 1575 1580  
 Ala Pro Gly Val Cys Asp Pro Leu Thr Gly Gln Cys Tyr Cys Lys Glu  
 1585 1590 1595 1600  
 Asn Val Gln Gly Pro Lys Cys Asp Gln Cys Ser Leu Gly Thr Phe Ser

10037182 122101

1605	1610	1615
Leu Asp Ala Ala Asn Pro Lys Gly Cys Thr Arg Cys Phe Cys Phe Gly		
1620	1625	1630
Ala Thr Glu Arg Cys Arg Ser Ser Ser Tyr Thr Arg Gln Glu Phe Val		
1635	1640	1645
Asp Met Glu Gly Trp Val Leu Leu Ser Thr Asp Arg Gln Val Val Pro		
1650	1655	1660
His Glu Arg Gln Pro Gly Thr Glu Met Leu Arg Ala Asp Leu Arg His		
1665	1670	1675
Val Pro Glu Ala Val Pro Glu Ala Phe Pro Glu Leu Tyr Trp Gln Ala		
1685	1690	1695
Pro Pro Ser Tyr Leu Gly Asp Arg Val Ser Ser Tyr Gly Gly Thr Leu		
1700	1705	1710
Arg Tyr Glu Leu His Ser Glu Thr Gln Arg Gly Asp Val Phe Val Pro		
1715	1720	1725
Met Glu Ser Arg Pro Asp Val Val Leu Gln Gly Asn Gln Met Ser Ile		
1730	1735	1740
Thr Phe Leu Glu Pro Ala Tyr Pro Thr Pro Gly His Val His Arg Gly		
1745	1750	1755
Gln Leu Gln Leu Val Glu Gly Asn Phe Arg His Thr Glu Thr Arg Asn		
1765	1770	1775
Thr Val Ser Arg Glu Glu Leu Met Met Val Leu Ala Ser Leu Glu Gln		
1780	1785	1790
Leu Gln Ile Arg Ala Leu Phe Ser Gln Ile Ser Ser Ala Val Ser Leu		
1795	1800	1805
Arg Arg Val Ala Leu Glu Val Ala Ser Pro Ala Gly Gln Gly Ala Leu		
1810	1815	1820
Ala Ser Asn Val Glu Leu Cys Leu Cys Pro Ala Ser Tyr Arg Gly Asp		
1825	1830	1835
Ser Cys Gln Glu Cys Ala Pro Gly Phe Tyr Arg Asp Val Lys Gly Leu		
1845	1850	1855
Phe Leu Gly Arg Cys Val Pro Cys Gln Cys His Gly His Ser Asp Arg		
1860	1865	1870
Cys Leu Pro Gly Ser Gly Val Cys Val Asp Cys Gln His Asn Thr Glu		
1875	1880	1885
Gly Ala His Cys Glu Arg Cys Gln Ala Gly Phe Met Ser Ser Arg Asp		
1890	1895	1900
Asp Pro Ser Ala Pro Cys Val Ser Cys Pro Cys Pro Leu Ser Val Pro		
1905	1910	1915
Ser Asn Asn Phe Ala Glu Gly Cys Val Leu Arg Gly Gly Arg Thr Gln		
1925	1930	1935

Cys Leu Cys Lys Pro Gly Tyr Ala Gly Ala Ser Cys Glu Arg Cys Ala  
 1940 1945 1950  
 Pro Gly Phe Phe Gly Asn Pro Leu Val Leu Gly Ser Ser Cys Gln Pro  
 1955 1960 1965  
 Cys Asp Cys Ser Gly Asn Gly Asp Pro Asn Leu Leu Phe Ser Asp Cys  
 1970 1975 1980  
 Asp Pro Leu Thr Gly Ala Cys Arg Gly Cys Leu Arg His Thr Thr Gly  
 1985 1990 1995 2000  
 Pro Arg Cys Glu Ile Cys Ala Pro Gly Phe Tyr Gly Asn Ala Leu Leu  
 2005 2010 2015  
 Pro Gly Asn Cys Thr Arg Cys Asp Cys Thr Pro Cys Gly Thr Glu Ala  
 2020 2025 2030  
 Cys Asp Pro His Ser Gly His Cys Leu Cys Lys Ala Gly Val Thr Gly  
 2035 2040 2045  
 Arg Arg Cys Asp Arg Cys Gln Glu Gly His Phe Gly Phe Asn Gly Cys  
 2050 2055 2060  
 Gly Gly Cys Arg Pro Cys Ala Cys Gly Pro Ala Ala Glu Gly Ser Glu  
 2065 2070 2075 2080  
 Cys His Pro Gln Ser Gly Gln Cys His Cys Arg Pro Gly Thr Met Gly  
 2085 2090 2095  
 Pro Gln Cys Arg Glu Cys Ala Pro Gly Tyr Trp Gly Leu Pro Glu Gln  
 2100 2105 2110  
 Gly Cys Arg Arg Cys Gln Cys Pro Gly Gly Arg Cys Asp Pro His Thr  
 2115 2120 2125  
 Gly Arg Cys Asn Cys Pro Pro Gly Leu Ser Gly Glu Arg Cys Asp Thr  
 2130 2135 2140  
 Cys Ser Gln Gln His Gln Val Pro Val Pro Gly Gly Pro Val Gly His  
 2145 2150 2155 2160  
 Ser Ile His Cys Glu Val Cys Asp His Cys Val Val Leu Leu Leu Asp  
 2165 2170 2175  
 Asp Leu Glu Arg Ala Gly Ala Leu Leu Pro Ala Ile His Glu Gln Leu  
 2180 2185 2190  
 Arg Gly Ile Asn Ala Ser Ser Met Ala Trp Ala Arg Leu His Arg Leu  
 2195 2200 2205  
 Asn Ala Ser Ile Ala Asp Leu Gln Ser Gln Leu Arg Ser Pro Leu Gly  
 2210 2215 2220  
 Pro Arg His Glu Thr Ala Gln Gln Leu Glu Val Leu Glu Gln Gln Ser  
 2225 2230 2235 2240  
 Thr Ser Leu Gly Gln Asp Ala Arg Arg Leu Gly Gly Gln Ala Val Gly  
 2245 2250 2255

Thr Arg Asp Gln Ala Ser Gln Leu Leu Ala Gly Thr Glu Ala Thr Leu  
 2260 2265 2270  
 Gly His Ala Lys Thr Leu Leu Ala Ala Ile Arg Ala Val Asp Arg Thr  
 2275 2280 2285  
 Leu Ser Glu Leu Met Ser Gln Thr Gly His Leu Gly Leu Ala Asn Ala  
 2290 2295 2300  
 Ser Ala Pro Ser Gly Glu Gln Leu Leu Arg Thr Leu Ala Glu Val Glu  
 2305 2310 2315 2320  
 Arg Leu Leu Trp Glu Met Arg Ala Arg Asp Leu Gly Ala Pro Gln Ala  
 2325 2330 2335  
 Ala Ala Glu Ala Glu Leu Ala Ala Ala Gln Arg Leu Leu Ala Arg Val  
 2340 2345 2350  
 Gln Glu Gln Leu Ser Ser Leu Trp Glu Glu Asn Gln Ala Leu Ala Thr  
 2355 2360 2365  
 Gln Thr Arg Asp Arg Leu Ala Gln His Glu Ala Gly Leu Met Asp Leu  
 2370 2375 2380  
 Arg Glu Ala Leu Asn Arg Ala Val Asp Ala Thr Arg Glu Ala Gln Glu  
 2385 2390 2395 2400  
 Leu Asn Ser Arg Asn Gln Glu Arg Leu Glu Glu Ala Leu Gln Arg Lys  
 2405 2410 2415  
 Gln Glu Leu Ser Arg Asp Asn Ala Thr Leu Gln Ala Thr Leu His Ala  
 2420 2425 2430  
 Ala Arg Asp Thr Leu Ala Ser Val Phe Arg Leu Leu His Ser Leu Asp  
 2435 2440 2445  
 Gln Ala Lys Glu Glu Leu Glu Arg Leu Ala Ala Ser Leu Asp Gly Ala  
 2450 2455 2460  
 Arg Thr Pro Leu Leu Gln Arg Met Gln Thr Phe Ser Pro Ala Gly Ser  
 2465 2470 2475 2480  
 Lys Leu Arg Leu Val Glu Ala Ala Glu Ala His Ala Gln Gln Leu Gly  
 2485 2490 2495  
 Gln Leu Ala Leu Asn Leu Ser Ser Ile Ile Leu Asp Val Asn Gln Asp  
 2500 2505 2510  
 Arg Leu Thr Gln Arg Ala Ile Glu Ala Ser Asn Ala Tyr Ser Arg Ile  
 2515 2520 2525  
 Leu Gln Ala Val Gln Ala Ala Glu Asp Ala Ala Gly Gln Ala Leu Gln  
 2530 2535 2540  
 Gln Ala Asp His Thr Trp Ala Thr Val Val Arg Gln Gly Leu Val Asp  
 2545 2550 2555 2560  
 Arg Ala Gln Gln Leu Leu Ala Asn Ser Thr Ala Leu Glu Glu Ala Met  
 2565 2570 2575  
 Leu Gln Glu Gln Gln Arg Leu Gly Leu Val Trp Ala Ala Leu Gln Gly



1003422-433404

2580	2585	2590
Ala Arg Thr Gln Leu Arg Asp Val Arg Ala Lys Lys Asp Gln Leu Glu 2595 2600 2605		
Ala His Ile Gln Ala Ala Gln Ala Met Leu Ala Met Asp Thr Asp Glu 2610 2615 2620		
Thr Ser Lys Lys Ile Ala His Ala Lys Ala Val Ala Ala Glu Ala Gln 2625 2630 2635 2640		
Asp Thr Ala Thr Arg Val Gln Ser Gln Leu Gln Ala Met Gln Glu Asn 2645 2650 2655		
Val Glu Arg Trp Gln Gly Gln Tyr Glu Gly Leu Arg Gly Gln Asp Leu 2660 2665 2670		
Gly Gln Ala Val Leu Asp Ala Gly His Ser Val Ser Thr Leu Glu Lys 2675 2680 2685		
Thr Leu Pro Gln Leu Leu Ala Lys Leu Ser Ile Leu Glu Asn Arg Gly 2690 2695 2700		
Val His Asn Ala Ser Leu Ala Leu Ser Ala Ser Ile Gly Arg Val Arg 2705 2710 2715 2720		
Glu Leu Ile Ala Gln Ala Arg Gly Ala Ala Ser Lys Val Lys Val Pro 2725 2730 2735		
Met Lys Phe Asn Gly Arg Ser Gly Val Gln Leu Arg Thr Pro Arg Asp 2740 2745 2750		
Leu Ala Asp Leu Ala Ala Tyr Thr Ala Leu Lys Phe Tyr Leu Gln Gly 2755 2760 2765		
Pro Glu Pro Glu Pro Gly Gln Gly Thr Glu Asp Arg Phe Val Met Tyr 2770 2775 2780		
Met Gly Ser Arg Gln Ala Thr Gly Asp Tyr Met Gly Val Ser Leu Arg 2785 2790 2795 2800		
Asp Lys Lys Val His Trp Val Tyr Gln Leu Gly Glu Ala Gly Pro Ala 2805 2810 2815		
Val Leu Ser Ile Asp Glu Asp Ile Gly Glu Gln Phe Ala Ala Val Ser 2820 2825 2830		
Leu Asp Arg Thr Leu Gln Phe Gly His Met Ser Val Thr Val Glu Arg 2835 2840 2845		
Gln Met Ile Gln Glu Thr Lys Gly Asp Thr Val Ala Pro Gly Ala Glu 2850 2855 2860		
Gly Leu Leu Asn Leu Arg Pro Asp Asp Phe Val Phe Tyr Val Gly Gly 2865 2870 2875 2880		
Tyr Pro Ser Thr Phe Thr Pro Pro Pro Leu Leu Arg Phe Pro Gly Tyr 2885 2890 2895		
Arg Gly Cys Ile Glu Met Asp Thr Leu Asn Glu Glu Val Val Ser Leu 2900 2905 2910		

Tyr Asn Phe Glu Arg Thr Phe Gln Leu Asp Thr Ala Val Asp Arg Pro  
2915 2920 2925

Cys Ala Arg Ser Lys Ser Thr Gly Asp Pro Trp Leu Thr Asp Gly Ser  
2930 2935 2940

Tyr Leu Asp Gly Thr Gly Phe Ala Arg Ile Ser Phe Asp Ser Gln Ile  
2945 2950 2955 2960

Ser Thr Thr Lys Arg Phe Glu Gln Glu Leu Arg Leu Val Ser Tyr Ser  
2965 2970 2975

Gly Val Leu Phe Phe Leu Lys Gln Gln Ser Gln Phe Leu Cys Leu Ala  
2980 2985 2990

Val Gln Glu Gly Ser Leu Val Leu Leu Tyr Asp Phe Gly Ala Gly Leu  
2995 3000 3005

Lys Lys Ala Val Pro Leu Gln Pro Pro Pro Pro Leu Thr Ser Ala Ser  
3010 3015 3020

Lys Ala Ile Gln Val Phe Leu Leu Gly Gly Ser Arg Lys Arg Val Leu  
3025 3030 3035 3040

Val Arg Val Glu Arg Ala Thr Val Tyr Ser Val Glu Gln Asp Asn Asp  
3045 3050 3055

Leu Glu Leu Ala Asp Ala Tyr Tyr Leu Gly Gly Val Pro Pro Asp Gln  
3060 3065 3070

Leu Pro Pro Ser Leu Arg Trp Leu Phe Pro Thr Gly Gly Ser Val Arg  
3075 3080 3085

Gly Cys Val Lys Gly Ile Lys Ala Leu Gly Lys Tyr Val Asp Leu Lys  
3090 3095 3100

Arg Leu Asn Thr Thr Gly Val Ser Ala Gly Cys Thr Ala Asp Leu Leu  
3105 3110 3115 3120

Val Gly Arg Ala Met Thr Phe His Gly His Gly Phe Leu Arg Leu Ala  
3125 3130 3135

Leu Ser Asn Val Ala Pro Leu Thr Gly Asn Val Tyr Ser Gly Phe Gly  
3140 3145 3150

Phe His Ser Ala Gln Asp Ser Ala Leu Leu Tyr Tyr Arg Ala Ser Pro  
3155 3160 3165

Asp Gly Leu Cys Gln Val Ser Leu Gln Gln Gly Arg Val Ser Leu Gln  
3170 3175 3180

Leu Leu Arg Thr Glu Val Lys Thr Gln Ala Gly Phe Ala Asp Gly Ala  
3185 3190 3195 3200

Pro His Tyr Val Ala Phe Tyr Ser Asn Ala Thr Gly Val Trp Leu Tyr  
3205 3210 3215

Val Asp Asp Gln Leu Gln Gln Met Lys Pro His Arg Gly Pro Pro Pro  
3220 3225 3230

1003484304  
T003484304

Glu Leu Gln Pro Gln Pro Glu Gly Pro Pro Arg Leu Leu Leu Gly Gly  
3235 3240 3245

Leu Pro Glu Ser Gly Thr Ile Tyr Asn Phe Ser Gly Cys Ile Ser Asn  
3250 3255 3260

Val Phe Val Gln Arg Leu Leu Gly Pro Gln Arg Val Phe Asp Leu Gln  
3265 3270 3275 3280

Gln Asn Leu Gly Ser Val Asn Val Ser Thr Gly Cys Ala Pro Ala Leu  
3285 3290 3295

Gln Ala Gln Thr Pro Gly Leu Gly Pro Arg Gly Leu Gln Ala Thr Ala  
3300 3305 3310

Arg Lys Ala Ser Arg Arg Ser Arg Gln Pro Ala Arg His Pro Ala Cys  
3315 3320 3325

Met Leu Pro Pro His Leu Arg Thr Thr Arg Asp Ser Tyr Gln Phe Gly  
3330 3335 3340

Gly Ser Leu Ser Ser His Leu Glu Phe Val Gly Ile Leu Ala Arg His  
3345 3350 3355 3360

Arg Asn Trp Pro Ser Leu Ser Met His Val Leu Pro Arg Ser Ser Arg  
3365 3370 3375

Gly Leu Leu Leu Phe Thr Ala Arg Leu Arg Pro Gly Ser Pro Ser Leu  
3380 3385 3390

Ala Leu Phe Leu Ser Asn Gly His Phe Val Ala Gln Met Glu Gly Leu  
3395 3400 3405

Gly Thr Arg Leu Arg Ala Gln Ser Arg Gln Arg Ser Arg Pro Gly Arg  
3410 3415 3420

Trp His Lys Val Ser Val Arg Trp Glu Lys Asn Arg Ile Leu Leu Val  
3425 3430 3435 3440

Thr Asp Gly Ala Arg Ala Trp Ser Gln Glu Gly Pro His Arg Gln His  
3445 3450 3455

Gln Gly Ala Glu His Pro Gln Pro His Thr Leu Phe Val Gly Gly Leu  
3460 3465 3470

Pro Ala Ser Ser His Ser Ser Lys Leu Pro Val Thr Val Gly Phe Ser  
3475 3480 3485

Gly Cys Val Lys Arg Leu Arg Leu His Gly Arg Pro Leu Gly Ala Pro  
3490 3495 3500

Thr Arg Met Ala Gly Val Thr Pro Cys Ile Leu Gly Pro Leu Glu Ala  
3505 3510 3515 3520

Gly Leu Phe Phe Pro Gly Ser Gly Gly Val Ile Thr Leu Asp Leu Pro  
3525 3530 3535

Gly Ala Thr Leu Pro Asp Val Gly Leu Glu Leu Glu Val Arg Pro Leu  
3540 3545 3550

Ala Val Thr Gly Leu Ile Phe His Leu Gly Gln Ala Arg Thr Pro Pro

3555	3560	3565	
Tyr Leu Gln Leu Gln Val Thr Glu Lys Gln Val Leu Leu Arg Ala Asp			
3570	3575	3580	
Asp Gly Ala Gly Glu Phe Ser Thr Ser Val Thr Arg Pro Ser Val Leu			
3585	3590	3595	3600
Cys Asp Gly Gln Trp His Arg Leu Ala Val Met Lys Ser Gly Asn Val			
	3605	3610	3615
Leu Arg Leu Glu Val Asp Ala Gln Ser Asn His Thr Val Gly Pro Leu			
	3620	3625	3630
Leu Ala Ala Ala Ala Gly Ala Pro Ala Pro Leu Tyr Leu Gly Gly Leu			
	3635	3640	3645
Pro Glu Pro Met Ala Val Gln Pro Trp Pro Pro Ala Tyr Cys Gly Cys			
	3650	3655	3660
Met Arg Arg Leu Ala Val Asn Arg Ser Pro Val Ala Met Thr Arg Ser			
3665	3670	3675	3680
Val Glu Val His Gly Ala Val Gly Ala Ser Gly Cys Pro Ala Ala			
	3685	3690	3695
<210> 3			
<211> 11009			
<212> DNA			
<213> Mus musculus			
<220>			
<221> CDS			
<222> (1)..(10905)			
<400> 3			
gac ctc tac tgc aag ctg gtt ggg ggt ccg gtg gct ggc gga gat ccc			48
Asp Leu Tyr Cys Lys Leu Val Gly Gly Pro Val Ala Gly Gly Asp Pro			
1	5	10	15
aat cag aca atc cag ggc cag tac tgt gac atc tgt aca gct gcc aac			96
Asn Gln Thr Ile Gln Gly Gln Tyr Cys Asp Ile Cys Thr Ala Ala Asn			
	20	25	30
agc aac aag gca cac cct gtg agc aac gcc atc gat ggc acg gag cgc			144
Ser Asn Lys Ala His Pro Val Ser Asn Ala Ile Asp Gly Thr Glu Arg			
	35	40	45
tgg tgg cag agc cca ccc ctg tcc cgt ggc ctg gag tac aat gag gtc			192
Trp Trp Gln Ser Pro Pro Leu Ser Arg Gly Leu Glu Tyr Asn Glu Val			
	50	55	60
aac gtc aca ctg gac ctg ggc cag gtg ttc cat gtg gcc tat gtg ctc			240
Asn Val Thr Leu Asp Leu Gly Gln Val Phe His Val Ala Tyr Val Leu			
	65	70	80
atc aag ttt gcc aac tca cct cgg cct gac ctc tgg gtg ctg gag cgg			288
Ile Lys Phe Ala Asn Ser Pro Arg Pro Asp Leu Trp Val Leu Glu Arg			
	85	90	95

tcc aca gac ttc ggt cac act tat cag ccg tgg cag ttc ttt gcc tcc	336
Ser Thr Asp Phe Gly His Thr Tyr Gln Pro Trp Gln Phe Phe Ala Ser	
100 105 110	
tcc aag agg gat tgt ttg gag cgg ttt gga cct cgg act cta gag cgc	384
Ser Lys Arg Asp Cys Leu Glu Arg Phe Gly Pro Arg Thr Leu Glu Arg	
115 120 125	
atc acg cag gac gac gac gtc atc tgc acc aca gaa tac tcg cga ata	432
Ile Thr Gln Asp Asp Asp Val Ile Cys Thr Thr Glu Tyr Ser Arg Ile	
130 135 140	
gtg cct ttg gag aat ggc gag att gtg gtg tcc ttg gta aat ggg cgc	480
Val Pro Leu Glu Asn Gly Glu Ile Val Val Ser Leu Val Asn Gly Arg	
145 150 155 160	
cct ggg gcc ttg aac ttc tcc tac tca ccg tta ctt cga gac ttc acc	528
Pro Gly Ala Leu Asn Phe Ser Tyr Ser Pro Leu Leu Arg Asp Phe Thr	
165 170 175	
aaa gcc acc aac atc cgc ttg cgg ttt ctg cga acc aac acg cta ctg	576
Lys Ala Thr Asn Ile Arg Leu Arg Phe Leu Arg Thr Asn Thr Leu Leu	
180 185 190	
ggc cac ctc atg ggc aag gcg ctg cgg gac ccc aca gtc acc cgc agg	624
Gly His Leu Met Gly Lys Ala Leu Arg Asp Pro Thr Val Thr Arg Arg	
195 200 205	
tat tat tac agc atc aaa gac atc agc att ggt ggg cgc tgt gtc tgt	672
Tyr Tyr Tyr Ser Ile Lys Asp Ile Ser Ile Gly Gly Arg Cys Val Cys	
210 215 220	
cat ggc cac gca gat gtc tgt gac gcc aag gac cca ttg gat cct ttc	720
His Gly His Ala Asp Val Cys Asp Ala Lys Asp Pro Leu Asp Pro Phe	
225 230 235 240	
agg ctg cag tgt gcc tgc cag cac aat aca tgt gga ggc tct tgt gac	768
Arg Leu Gln Cys Ala Cys Gln His Asn Thr Cys Gly Gly Ser Cys Asp	
245 250 255	
cga tgc tgt cca ggc ttc aac cag cag ccg tgg aag ccc gcc acc acg	816
Arg Cys Cys Pro Gly Phe Asn Gln Gln Pro Trp Lys Pro Ala Thr Thr	
260 265 270	
gac agc gcc aat gag tgc cag tcc tgc aat tgc cac ggc cat gcc tac	864
Asp Ser Ala Asn Glu Cys Gln Ser Cys Asn Cys His Gly His Ala Tyr	
275 280 285	
gac tgt tac tac gac cct gag gtg gat cgg cgc aat gcc agc cag aac	912
Asp Cys Tyr Tyr Asp Pro Glu Val Asp Arg Arg Asn Ala Ser Gln Asn	
290 295 300	
cag gac aac gtg tac cag ggt gga ggt gtc tgc ctg gat tgc cag cat	960
Gln Asp Asn Val Tyr Gln Gly Gly Gly Val Cys Leu Asp Cys Gln His	
305 310 315 320	
cac act acg ggt atc aac tgt gag cgt tgt ctg cct ggc ttc ttc cgt	1008
His Thr Thr Gly Ile Asn Cys Glu Arg Cys Leu Pro Gly Phe Phe Arg	
325 330 335	
gcc cct gac cag cct ctc gac tca cct cat gtc tgt cgg ccc tgc gac	1056

Ala	Pro	Asp	Gln	Pro	Leu	Asp	Ser	Pro	His	Val	Cys	Arg	Pro	Cys	Asp		
			340					345					350				
tgt	gag	tca	gac	ttc	acg	gat	ggg	acc	tgt	gaa	gac	ttg	acg	ggc	cgc	1104	
Cys	Glu	Ser	Asp	Phe	Thr	Asp	Gly	Thr	Cys	Glu	Asp	Leu	Thr	Gly	Arg		
			355				360					365					
tgt	tac	tgc	agg	ccg	aac	ttc	aca	gga	gag	cta	tgt	gct	gcc	tgc	gct	1152	
Cys	Tyr	Cys	Arg	Pro	Asn	Phe	Thr	Gly	Glu	Leu	Cys	Ala	Ala	Cys	Ala		
			370				375					380					
gag	ggc	tac	acg	gac	ttc	cca	cac	tgc	tac	cct	ctg	cct	tca	ttt	cct	1200	
Glu	Gly	Tyr	Thr	Asp	Phe	Pro	His	Cys	Tyr	Pro	Leu	Pro	Ser	Phe	Pro		
						390					395				400		
cac	aat	gac	acg	aga	gaa	cag	gtg	ctt	ccc	gct	gga	caa	atc	gtg	aac	1248	
His	Asn	Asp	Thr	Arg	Glu	Gln	Val	Leu	Pro	Ala	Gly	Gln	Ile	Val	Asn		
				405					410					415			
tgt	gat	tgc	aat	gct	gca	ggg	acc	cag	ggc	aat	gcc	tgc	cgg	aag	gac	1296	
Cys	Asp	Cys	Asn	Ala	Ala	Gly	Thr	Gln	Gly	Asn	Ala	Cys	Arg	Lys	Asp		
				420				425					430				
cca	agg	ttg	gga	cgg	tgt	gtc	tgc	aaa	ccc	aac	ttc	cgg	ggt	gcc	cac	1344	
Pro	Arg	Leu	Gly	Arg	Cys	Val	Cys	Lys	Pro	Asn	Phe	Arg	Gly	Ala	His		
				435				440					445				
tgt	gag	ctc	tgt	gct	cct	gga	ttc	cac	ggg	cct	agc	tgc	cac	cca	tgc	1392	
Cys	Glu	Leu	Cys	Ala	Pro	Gly	Phe	His	Gly	Pro	Ser	Cys	His	Pro	Cys		
				450				455				460					
cag	tgt	tcc	agc	cct	ggg	gta	gcc	aac	agc	ctc	tgt	gac	cca	gag	tct	1440	
Gln	Cys	Ser	Ser	Pro	Gly	Val	Ala	Asn	Ser	Leu	Cys	Asp	Pro	Glu	Ser		
						470					475				480		
ggc	cag	tgc	atg	tgc	cgc	acc	ggc	ttt	gag	ggg	gac	agg	tgt	gac	cac	1488	
Gly	Gln	Cys	Met	Cys	Arg	Thr	Gly	Phe	Glu	Gly	Asp	Arg	Cys	Asp	His		
					485				490					495			
tgt	gcc	ctt	ggc	tat	ttc	cac	ttc	cct	ctc	tgt	cag	ctg	tgt	ggc	tgc	1536	
Cys	Ala	Leu		Gly	Tyr	Phe	His	Phe	Pro	Leu	Cys	Gln	Leu	Cys	Gly		
				500					505					510			
agc	cca	gca	ggg	acc	ctg	cct	gaa	ggc	tgt	gac	gag	gct	ggc	cgc	tgc	1584	
Ser	Pro	Ala	Gly	Thr	Leu	Pro	Glu	Gly	Cys	Asp	Glu	Ala	Gly	Arg	Cys		
				515				520					525				
cag	tgc	cga	cct	ggc	ttt	gac	ggc	cct	cac	tgt	gac	cga	tgc	ctt	cca	1632	
Gln	Cys	Arg	Pro	Gly	Phe	Asp	Gly	Pro	His	Cys	Asp	Arg	Cys	Leu	Pro		
				530				535					540				
gga	tac	cat	ggg	tat	ccc	gac	tgt	cac	gct	tgt	gcc	tgt	gac	cct	cgg	1680	
Gly	Tyr	His	Gly	Tyr	Pro	Asp	Cys	His	Ala	Cys	Ala	Cys	Asp	Pro	Arg		
						550				555					560		
ggg	gcc	ctg	gat	caa	cag	tgt	gga	gtg	ggc	ggt	ttg	tgc	cac	tgc	cgt	1728	
Gly	Ala	Leu	Asp	Gln	Gln	Cys	Gly	Val	Gly	Gly	Leu	Cys	His	Cys	Arg		
						565				570					575		
cct	ggc	aac	aca	ggt	gcc	act	tgt	cag	gaa	tgt	agc	ccc	ggc	ttc	tac	1776	
Pro	Gly	Asn	Thr	Gly	Ala	Thr	Cys	Gln	Glu	Cys	Ser	Pro	Gly	Phe	Tyr		

580	585	590	
ggc ttc ccc agc tgc atc ccc tgc cac tgc tct gcc gat ggc tcc ttg Gly Phe Pro Ser Cys Ile Pro Cys His Cys Ser Ala Asp Gly Ser Leu 595 600 605			1824
cat aca acc tgt gac ccg aca acc ggc cag tgt agg tgt cga ccc cga His Thr Thr Cys Asp Pro Thr Thr Gly Gln Cys Arg Cys Arg Pro Arg 610 615 620			1872
gtg aca gga cta cat tgt gat atg tgt gta cca ggc gcc tat aac ttc Val Thr Gly Leu His Cys Asp Met Cys Val Pro Gly Ala Tyr Asn Phe 625 630 635 640			1920
ccc tac tgt gaa gct ggc tct tgt cat cct gct ggt ctg gcc cca gcc Pro Tyr Cys Glu Ala Gly Ser Cys His Pro Ala Gly Leu Ala Pro Ala 645 650 655			1968
aat cct gcc ctt cct gag aca cag gct ccc tgt atg tgc cgg gct cac Asn Pro Ala Leu Pro Glu Thr Gln Ala Pro Cys Met Cys Arg Ala His 660 665 670			2016
gtg gaa ggg cca agc tgt gat cgc tgt aaa cct ggg tac tgg ggg ctg Val Glu Gly Pro Ser Cys Asp Arg Cys Lys Pro Gly Tyr Trp Gly Leu 675 680 685			2064
agc gcc agc aac cct gaa ggc tgc aca cgc tgc agc tgt gac cca cga Ser Ala Ser Asn Pro Glu Gly Cys Thr Arg Cys Ser Cys Asp Pro Arg 690 695 700			2112
ggc acc ctg ggt gga gtt act gag tgc cag ggc aat ggg cag tgc ttc Gly Thr Leu Gly Gly Val Thr Glu Cys Gln Gly Asn Gly Gln Cys Phe 705 710 715 720			2160
tgc aag gct cac gtg tgt ggc aag acc tgt gca gcc tgc aag gat ggc Cys Lys Ala His Val Cys Gly Lys Thr Cys Ala Ala Cys Lys Asp Gly 725 730 735			2208
ttc ttt ggc ctg gat tat gct gac tac ttt ggc tgc cgt agc tgt agg Phe Phe Gly Leu Asp Tyr Ala Asp Tyr Phe Gly Cys Arg Ser Cys Arg 740 745 750			2256
tgt gat gtt ggt ggt gcc ctg ggt cag ggc tgt gaa cca aag aca ggt Cys Asp Val Gly Gly Ala Leu Gly Gln Gly Cys Glu Pro Lys Thr Gly 755 760 765			2304
gcc tgc agg tgc cgc cct aac acc caa gga ccc acc tgt agc gag cca Ala Cys Arg Cys Arg Pro Asn Thr Gln Gly Pro Thr Cys Ser Glu Pro 770 775 780			2352
gcg aag gac cac tac ttg cca gac ctg cac cac atg cgg ctg gaa cta Ala Lys Asp His Tyr Leu Pro Asp Leu His His Met Arg Leu Glu Leu 785 790 795 800			2400
gag gag gcg gcc act ccc gag ggc cac gct gta cgc ttt ggc ttc aac Glu Glu Ala Ala Thr Pro Glu Gly His Ala Val Arg Phe Gly Phe Asn 805 810 815			2448
ccc ctg gag ttt gag aac ttt agc tgg aga ggc tac gca cac atg atg Pro Leu Glu Phe Glu Asn Phe Ser Trp Arg Gly Tyr Ala His Met Met 820 825 830			2496

gct atc cag ccc agg att gtg gcc agg ctg aac gtg acc tcc cct gac	2544
Ala Ile Gln Pro Arg Ile Val Ala Arg Leu Asn Val Thr Ser Pro Asp	
835 840 845	
ctc ttt cga ctg gtt ttc cga tat gtc aac cgt gga tca acc agc gtg	2592
Leu Phe Arg Leu Val Phe Arg Tyr Val Asn Arg Gly Ser Thr Ser Val	
850 855 860	
aat ggg cag atc tct gtt cgt gaa gag ggc aag ctt tcc agc tgt acc	2640
Asn Gly Gln Ile Ser Val Arg Glu Glu Gly Lys Leu Ser Ser Cys Thr	
865 870 875 880	
aac tgc aca gag cag agc cag cca gtg gct ttc cca ccc agc act gag	2688
Asn Cys Thr Glu Gln Ser Gln Pro Val Ala Phe Pro Pro Ser Thr Glu	
885 890 895	
cct gcc ttt gtc act gtg ccc cag agg ggc ttt ggg gaa ccc ttt gtg	2736
Pro Ala Phe Val Thr Val Pro Gln Arg Gly Phe Gly Glu Pro Phe Val	
900 905 910	
ctg aac ccc ggc atc tgg gcc ttg ctg gtc gag gct gaa ggt gta ctc	2784
Leu Asn Pro Gly Ile Trp Ala Leu Leu Val Glu Ala Glu Gly Val Leu	
915 920 925	
ttg gac tac gtg gtc cta ctg ccc agc acc tac tat gag gca gct ctc	2832
Leu Asp Tyr Val Val Leu Leu Pro Ser Thr Tyr Tyr Glu Ala Ala Leu	
930 935 940	
cta cag cat cga gta acg gag gcc tgt acc tac cgt ccc tca gcc ctg	2880
Leu Gln His Arg Val Thr Glu Ala Cys Thr Tyr Arg Pro Ser Ala Leu	
945 950 955 960	
cac tcc aca gag aac tgt ctt gtc tat gct cac cta ccc ctg gat ggc	2928
His Ser Thr Glu Asn Cys Leu Val Tyr Ala His Leu Pro Leu Asp Gly	
965 970 975	
ttc cct tca gca gct gga act gag gcc ctg tgt cgc cat gac aac agc	2976
Phe Pro Ser Ala Ala Gly Thr Glu Ala Leu Cys Arg His Asp Asn Ser	
980 985 990	
ctg ccc cgg ccc tgc ccc aca gag cag ctc agc ccc tca cac cca ccg	3024
Leu Pro Arg Pro Cys Pro Thr Glu Gln Leu Ser Pro Ser His Pro Pro	
995 1000 1005	
ctg gcg acc tgc ttc ggc agt gat gtg gac atc cag ctc gag atg gcc	3072
Leu Ala Thr Cys Phe Gly Ser Asp Val Asp Ile Gln Leu Glu Met Ala	
1010 1015 1020	
gtg cct cag cct ggc caa tat gtt ctc gtg gtg gaa tat gtc ggt gag	3120
Val Pro Gln Pro Gly Gln Tyr Val Leu Val Val Glu Tyr Val Gly Glu	
1025 1030 1035 1040	
gat tca cac caa gag atg gga gtg gct gtg cac acc cct cag aga gcc	3168
Asp Ser His Gln Glu Met Gly Val Ala Val His Thr Pro Gln Arg Ala	
1045 1050 1055	
ccc cag caa ggg gtg ctc aac ctc cac ccc tgc cca tac agc tcc ctg	3216
Pro Gln Gln Gly Val Leu Asn Leu His Pro Cys Pro Tyr Ser Ser Leu	
1060 1065 1070	



tgc cgg agt ccg gct cgg gac acc cag cat cat cta gcc atc ttc cac Cys Arg Ser Pro Ala Arg Asp Thr Gln His His Leu Ala Ile Phe His 1075 1080 1085	3264
ctg gac tct gag gct agc atc cgg ctc aca gct gag caa gct cac ttc Leu Asp Ser Glu Ala Ser Ile Arg Leu Thr Ala Glu Gln Ala His Phe 1090 1095 1100	3312
ttc ctg cac agc gtc acc ctg gta cct gtg gag gag ttc agt act gag Phe Leu His Ser Val Thr Leu Val Pro Val Glu Glu Phe Ser Thr Glu 1105 1110 1115 1120	3360
ttt gtg gag ccc cgg gtc ttc tgt gtg agc agt cat gga act ttc aac Phe Val Glu Pro Arg Val Phe Cys Val Ser Ser His Gly Thr Phe Asn 1125 1130 1135	3408
ccc agc agt gct gcc tgt cta gcc tcc cga ttc ccg aag cca ccg cag Pro Ser Ser Ala Ala Cys Leu Ala Ser Arg Phe Pro Lys Pro Pro Gln 1140 1145 1150	3456
ccc atc atc ctt aag gac tgc cag gtc ttg ccg ctg cct ccc gac ctg Pro Ile Ile Leu Lys Asp Cys Gln Val Leu Pro Leu Pro Pro Asp Leu 1155 1160 1165	3504
cct ctg act cag tct cag gag ctc tca cca ggt gca ccc ccc gag gga Pro Leu Thr Gln Ser Gln Glu Leu Ser Pro Gly Ala Pro Pro Glu Gly 1170 1175 1180	3552
cca cag cct cgg ccg cca act gcg gtg gat cct aat gca gaa ccc acc Pro Gln Pro Arg Pro Pro Thr Ala Val Asp Pro Asn Ala Glu Pro Thr 1185 1190 1195 1200	3600
ttg ctg cgc cac ccc cag ggc acg gtg gtc ttc acc acc cag gtg ccc Leu Leu Arg His Pro Gln Gly Thr Val Val Phe Thr Thr Gln Val Pro 1205 1210 1215	3648
acc ctg ggc cgc tat gcc ttc ctg ctg cac ggc tac cag ccg gtc cac Thr Leu Gly Arg Tyr Ala Phe Leu Leu His Gly Tyr Gln Pro Val His 1220 1225 1230	3696
ccc tcc ttc cct gtg gag gta ctc att aat ggt ggc cgc atc tgg cag Pro Ser Phe Pro Val Glu Val Leu Ile Asn Gly Gly Arg Ile Trp Gln 1235 1240 1245	3744
ggc cac gcc aac gcc agc ttt tgt cct cat ggt tat ggc tgc cgt acc Gly His Ala Asn Ala Ser Phe Cys Pro His Gly Tyr Gly Cys Arg Thr 1250 1255 1260	3792
ctg gtg ttg tgt gag ggt cag acg atg ctg gat gtt aca gac aac gag Leu Val Leu Cys Glu Gly Gln Thr Met Leu Asp Val Thr Asp Asn Glu 1265 1270 1275 1280	3840
ctc acc gtg act gtg cgt gtg cca gaa ggc cgg tgg ctc tgg ctg gac Leu Thr Val Thr Val Arg Val Pro Glu Gly Arg Trp Leu Trp Leu Asp 1285 1290 1295	3888
tac gta ctc att gtc cct gag gat gct tac agc tcc agt tac ctc caa Tyr Val Leu Ile Val Pro Glu Asp Ala Tyr Ser Ser Ser Tyr Leu Gln 1300 1305 1310	3936
gag gag cct ttg gac aaa tcc tat gac ttc atc agc cac tgt gcc acc	3984

Glu	Glu	Pro	Leu	Asp	Lys	Ser	Tyr	Asp	Phe	Ile	Ser	His	Cys	Ala	Thr	
1315						1320			1325							
cag	ggc	tac	cac	att	agc	ccc	agc	agc	tca	tct	cca	ttc	tgc	cgg	aat	4032
Gln	Gly	Tyr	His	Ile	Ser	Pro	Ser	Ser	Ser	Ser	Pro	Phe	Cys	Arg	Asn	
1330						1335			1340							
gcc	gcc	acc	tcc	ttg	tct	ctc	ttc	tac	aac	aac	ggg	gcc	ctc	cct	tgt	4080
Ala	Ala	Thr	Ser	Leu	Ser	Leu	Phe	Tyr	Asn	Asn	Gly	Ala	Leu	Pro	Cys	
1345						1350			1355			1360				
ggc	tgc	cac	gag	gtg	ggg	gcc	gta	agc	ccc	acg	tgc	gaa	ccc	ttc	ggg	4128
Gly	Cys	His	Glu	Val	Gly	Ala	Val	Ser	Pro	Thr	Cys	Glu	Pro	Phe	Gly	
			1365						1370			1375				
ggc	cag	tgt	ccc	tgc	cgg	ggc	cac	gtt	att	ggc	cgt	gac	tgt	tcc	cgc	4176
Gly	Gln	Cys	Pro	Cys	Arg	Gly	His	Val	Ile	Gly	Arg	Asp	Cys	Ser	Arg	
			1380						1385			1390				
tgt	gcc	acc	ggc	tac	tgg	ggg	ttc	ccc	aac	tgc	agg	ccc	tgt	gac	tgt	4224
Cys	Ala	Thr	Gly	Tyr	Trp	Gly	Phe	Pro	Asn	Cys	Arg	Pro	Cys	Asp	Cys	
			1395						1400			1405				
gga	gcc	cgc	ctg	tgt	gac	gag	ctc	acg	ggc	cag	tgt	atc	tgt	cca	cca	4272
Gly	Ala	Arg	Leu	Cys	Asp	Glu	Leu	Thr	Gly	Gln	Cys	Ile	Cys	Pro	Pro	
1410						1415			1420							
cgc	act	gtt	ccc	cct	gac	tgc	ttg	gtc	tgc	cag	cca	cag	agc	ttt	ggg	4320
Arg	Thr	Val	Pro	Pro	Asp	Cys	Leu	Val	Cys	Gln	Pro	Gln	Ser	Phe	Gly	
1425						1430			1435			1440				
tgc	cac	ccc	ttg	gtg	ggc	tgt	gag	gag	tgt	aac	tgc	tca	ggg	ccc	ggc	4368
Cys	His	Pro	Leu	Val	Gly	Cys	Glu	Glu	Cys	Asn	Cys	Ser	Gly	Pro	Gly	
			1445						1450			1455				
gtc	cag	gag	ctg	acg	gac	cct	acc	tgt	gac	atg	gac	agc	ggc	cag	tgc	4416
Val	Gln		Glu	Leu	Thr	Asp	Pro	Thr	Cys	Asp	Met	Asp	Ser	Gly	Gln	Cys
			1460						1465			1470				
aga	tgc	aga	ccc	aat	gta	gct	gga	cgt	cgc	tgt	gat	acc	tgt	gcc	cgg	4464
Arg	Cys	Arg	Pro	Asn	Val	Ala	Gly	Arg	Arg	Cys	Asp	Thr	Cys	Ala	Pro	
1475						1480			1485							
ggc	ttc	tat	ggc	tat	cct	agc	tgt	cgc	ccc	tgt	gac	tgc	cat	gag	gca	4512
Gly	Phe	Tyr	Gly	Tyr	Pro	Ser	Cys	Arg	Pro	Cys	Asp	Cys	His	Glu	Ala	
1490						1495			1500							
ggc	acc	atg	gct	agc	gtg	tgt	gac	ccc	ctc	aca	ggc	caa	tgc	cat	tgc	4560
Gly	Thr	Met	Ala	Ser	Val	Cys	Asp	Pro	Leu	Thr	Gly	Gln	Cys	His	Cys	
1505						1510			1515			1520				
aag	gag	aac	gtg	cag	ggc	tca	aga	tgt	gac	cag	tgt	cgc	gtg	ggg	acc	4608
Lys	Glu	Asn	Val	Gln	Gly	Ser	Arg	Cys	Asp	Gln	Cys	Arg	Val	Gly	Thr	
			1525						1530			1535				
ttc	tcc	ttg	gat	gct	gct	aac	ccc	aag	ggc	tgt	acc	cgc	tgc	ttc	tgt	4656
Phe	Ser	Leu	Asp	Ala	Ala	Asn	Pro	Lys	Gly	Cys	Thr	Arg	Cys	Phe	Cys	
			1540						1545			1550				
ttc	ggg	gcc	aca	gag	cgc	tgt</										

1555	1560	1565	
ttc gtg gac atg gag ggc tgg gtg ctg ttg agc agt gac cgg cag gtg			4752
Phe Val Asp Met Glu Gly Trp Val Leu Leu Ser Ser Asp Arg Gln Val			
1570	1575	1580	
gta ccc cac gag cat cgg cct gag ata gag ctg ctg cac gca gat ctg			4800
Val Pro His Glu His Arg Pro Glu Ile Glu Leu Leu His Ala Asp Leu			
1585	1590	1595	1600
cgc tct gtg gct gac act ttc tca gag ctg tac tgg cag gct ccg ccc			4848
Arg Ser Val Ala Asp Thr Phe Ser Glu Leu Tyr Trp Gln Ala Pro Pro			
1605	1610	1615	
tcc tat ctg gga gac agg gtg tca tcc tac ggt gga acc ctc cac tat			4896
Ser Tyr Leu Gly Asp Arg Val Ser Ser Tyr Gly Gly Thr Leu His Tyr			
1620	1625	1630	
gag ctg cac tca gag acc cag cga ggt gat atc ttc att ccc tac gag			4944
Glu Leu His Ser Glu Thr Gln Arg Gly Asp Ile Phe Ile Pro Tyr Glu			
1635	1640	1645	
agc cgg ccg gac gtc gtg ctg cag ggc aac caa atg agc atc gcc ttc			4992
Ser Arg Pro Asp Val Val Leu Gln Gly Asn Gln Met Ser Ile Ala Phe			
1650	1655	1660	
ctg gaa ctg gcg tac cct ccg cct ggc cag gtt cac cga gga cag cta			5040
Leu Glu Leu Ala Tyr Pro Pro Pro Gly Gln Val His Arg Gly Gln Leu			
1665	1670	1675	1680
cag ctg gta gag ggg aac ttc cgg cac ttg gag act cac aac ccc gtg			5088
Gln Leu Val Glu Gly Asn Phe Arg His Leu Glu Thr His Asn Pro Val			
1685	1690	1695	
tcc cga gaa gaa ctc atg atg gtg ctg gcc ggc ctg gag cag ctg cag			5136
Ser Arg Glu Glu Leu Met Met Val Leu Ala Gly Leu Glu Gln Leu Gln			
1700	1705	1710	
atc cgt gct ctc ttc tcg cag acc tct tcc agt gtc tcc ttg cgt aga			5184
Ile Arg Ala Leu Phe Ser Gln Thr Ser Ser Ser Val Ser Leu Arg Arg			
1715	1720	1725	
gtg gta ctg gag gtg gct agc gag gct ggt agg ggg cct cca gcc agc			5232
Val Val Leu Glu Val Ala Ser Glu Ala Gly Arg Gly Pro Pro Ala Ser			
1730	1735	1740	
aat gtg gaa ctg tgt atg tgc cct gcc aac tac cgt ggg gac tcg tgc			5280
Asn Val Glu Leu Cys Met Cys Pro Ala Asn Tyr Arg Gly Asp Ser Cys			
1745	1750	1755	1760
cag gaa tgt gcc cct ggc tat tac cgg gac acc aag ggt ctc ttc cta			5328
Gln Glu Cys Ala Pro Gly Tyr Tyr Arg Asp Thr Lys Gly Leu Phe Leu			
1765	1770	1775	
ggc cga tgt gtc ccc tgt cag tgc cat ggc cat tca gat cgc tgc ctt			5376
Gly Arg Cys Val Pro Cys Gln Cys His Gly His Ser Asp Arg Cys Leu			
1780	1785	1790	
cct ggc tct ggc att tgt gtg ggc tgc cag cac aac aca gaa ggg gac			5424
Pro Gly Ser Gly Ile Cys Val Gly Cys Gln His Asn Thr Glu Gly Asp			
1795	1800	1805	

caa tgt gag cgc tgt agg cct ggc ttt gtc agc agt gat ccc agt aac	5472
Gln Cys Glu Arg Cys Arg Pro Gly Phe Val Ser Ser Asp Pro Ser Asn	
1810 1815 1820	
cct gca tcc cca tgt gtg agc tgc cct tgc ccc ttg gca gtg ccc tcc	5520
Pro Ala Ser Pro Cys Val Ser Cys Pro Cys Pro Leu Ala Val Pro Ser	
1825 1830 1835 1840	
aat aat ttt gca gac ggt tgc gtc tta aga aat ggc cga acc cag tgc	5568
Asn Asn Phe Ala Asp Gly Cys Val Leu Arg Asn Gly Arg Thr Gln Cys	
1845 1850 1855	
ctc tgc agg cca ggc tat gct ggt gcc tcc tgc gag cgg tgt gca cct	5616
Leu Cys Arg Pro Gly Tyr Ala Gly Ala Ser Cys Glu Arg Cys Ala Pro	
1860 1865 1870	
ggc ttt ttt ggg aac ccc ctg gtg cta ggc agc tcc tgt cag ccc tgc	5664
Gly Phe Phe Gly Asn Pro Leu Val Leu Gly Ser Ser Cys Gln Pro Cys	
1875 1880 1885	
gac tgc agc ggt aat gga gac ccc aac atg atc ttc agt gac tgc gac	5712
Asp Cys Ser Gly Asn Gly Asp Pro Asn Met Ile Phe Ser Asp Cys Asp	
1890 1895 1900	
ccc ctg acg ggt gcc tgt cga ggc tgc ctc cgt cac acc act ggg ccc	5760
Pro Leu Thr Gly Ala Cys Arg Gly Cys Leu Arg His Thr Thr Gly Pro	
1905 1910 1915 1920	
cac tgt gaa cgc tgt gcc cca ggc ttc tat ggc aat gct ttg ttg cca	5808
His Cys Glu Arg Cys Ala Pro Gly Phe Tyr Gly Asn Ala Leu Leu Pro	
1925 1930 1935	
ggc aac tgc acc cgg tgt gac tgt tcc cca tgt ggg aca gaa acc tgt	5856
Gly Asn Cys Thr Arg Cys Asp Cys Ser Pro Cys Gly Thr Glu Thr Cys	
1940 1945 1950	
gat ccc cag agt gga cgc tgc ctg tgc aaa gca ggc gtg act gga caa	5904
Asp Pro Gln Ser Gly Arg Cys Leu Cys Lys Ala Gly Val Thr Gly Gln	
1955 1960 1965	
cgt tgt gac cgc tgt ttg gaa gga tac ttc ggt ttt gag caa tgc cag	5952
Arg Cys Asp Arg Cys Leu Glu Gly Tyr Phe Gly Phe Glu Gln Cys Gln	
1970 1975 1980	
ggc tgc cgc cct tgt gcc tgt gga cca gct gcc aag ggc tcc gag tgc	6000
Gly Cys Arg Pro Cys Ala Cys Gly Pro Ala Ala Lys Gly Ser Glu Cys	
1985 1990 1995 2000	
cac cct cag agc ggt cag tgt cac tgc cag cca ggg acc aca gga ccc	6048
His Pro Gln Ser Gly Gln Cys His Cys Gln Pro Gly Thr Thr Gly Pro	
2005 2010 2015	
cag tgc ctc gag tgc gcc cct ggc tac tgg ggc ctc cca gag aag ggc	6096
Gln Cys Leu Glu Cys Ala Pro Gly Tyr Trp Gly Leu Pro Glu Lys Gly	
2020 2025 2030	
tgc agg cgc tgc cag tgt ccc cga ggc cac tgt gac cca cac acg ggc	6144
Cys Arg Arg Cys Gln Cys Pro Arg Gly His Cys Asp Pro His Thr Gly	
2035 2040 2045	

cac tgc acc tgt ccc ccg ggg ctc agc ggg gaa cgc tgt gac acc tgc His Cys Thr Cys Pro Pro Gly Leu Ser Gly Glu Arg Cys Asp Thr Cys 2050 2055 2060	6192
agc cag cag cac cag gtg cct gta ccg ggc aag cct ggg ggc cat ggc Ser Gln Gln His Gln Val Pro Val Pro Gly Lys Pro Gly Gly His Gly 2065 2070 2075 2080	6240
ata cac tgt gaa gtg tgt gac cac tgt gtg gtt ctc ctt ctg gat gac Ile His Cys Glu Val Cys Asp His Cys Val Val Leu Leu Leu Asp Asp 2085 2090 2095	6288
ctc gag cgg gct ggt gcc ctc ctc ccc gct atc cgt gag cag ctg cag Leu Glu Arg Ala Gly Ala Leu Leu Pro Ala Ile Arg Glu Gln Leu Gln 2100 2105 2110	6336
ggg atc aat gcc agc tcc gcg gcc tgg gcc agg ctg cac agg ctg aat Gly Ile Asn Ala Ser Ser Ala Ala Trp Ala Arg Leu His Arg Leu Asn 2115 2120 2125	6384
gcc tcc att gct gac ctg cag agt aaa ctc cgg agg cca ccg gga ccc Ala Ser Ile Ala Asp Leu Gln Ser Lys Leu Arg Arg Pro Pro Gly Pro 2130 2135 2140	6432
cgc tac cag gca gca cag cag cta cag act cta gag cag cag agt ata Arg Tyr Gln Ala Ala Gln Gln Leu Gln Thr Leu Glu Gln Gln Ser Ile 2145 2150 2155 2160	6480
agc ctt caa cag gac acg gag agg ctg ggc agt cag gcc aca ggg gtc Ser Leu Gln Gln Asp Thr Glu Arg Leu Gly Ser Gln Ala Thr Gly Val 2165 2170 2175	6528
caa ggt cag gca ggc cag cta ctg gac acc aca gag tcc aca ctg ggc Gln Gly Gln Ala Gly Gln Leu Leu Asp Thr Thr Glu Ser Thr Leu Gly 2180 2185 2190	6576
cgg gca cag aag ttg ttg gag tct gtg cga gct gtg ggc cgt gcc ctg Arg Ala Gln Lys Leu Leu Glu Ser Val Arg Ala Val Gly Arg Ala Leu 2195 2200 2205	6624
aat gag ctg gca tct cgc atg ggc caa gga tct cca ggc gat gcc ttg Asn Glu Leu Ala Ser Arg Met Gly Gln Gly Ser Pro Gly Asp Ala Leu 2210 2215 2220	6672
gta ccg tct ggc gag cag ctg cgc tgg gct ctg gct gaa gtg gag cgg Val Pro Ser Gly Glu Gln Leu Arg Trp Ala Leu Ala Glu Val Glu Arg 2225 2230 2235 2240	6720
ctg ctc tgg gat atg cgg acg cgt gac ctg ggg gcc cag ggg gca gtg Leu Leu Trp Asp Met Arg Thr Arg Asp Leu Gly Ala Gln Gly Ala Val 2245 2250 2255	6768
gca gag gcc gaa ctg gcc gaa gcc cag agg ctg atg gct cgt gtc cag Ala Glu Ala Glu Leu Ala Glu Ala Gln Arg Leu Met Ala Arg Val Gln 2260 2265 2270	6816
gag cag ctg acc agc ttc tgg gag gag aac cag tca ttg gcc aca cac Glu Gln Leu Thr Ser Phe Trp Glu Glu Asn Gln Ser Leu Ala Thr His 2275 2280 2285	6864
att cgg gac cag ctg gct cag tat gag tct ggc ctc atg gat ctt cgt	6912

Ile Arg Asp Gln Leu Ala Gln Tyr Glu Ser Gly Leu Met Asp Leu Arg	
2290 2295 2300	
gag gcc ctg aac cag gcc gtt aat acc acc cgg gag gct gag gaa ctc	6960
Glu Ala Leu Asn Gln Ala Val Asn Thr Thr Arg Glu Ala Glu Glu Leu	
2305 2310 2315 2320	
aac agc cgc aac cag gaa cgg gtg aag gaa gcc ctg caa tgg aaa cag	7008
Asn Ser Arg Asn Gln Glu Arg Val Lys Glu Ala Leu Gln Trp Lys Gln	
2325 2330 2335	
gaa ctg tcc cag gac aat gcc acc ctg aag gcc act ctt caa gct gcc	7056
Glu Leu Ser Gln Asp Asn Ala Thr Leu Lys Ala Thr Leu Gln Ala Ala	
2340 2345 2350	
agt ctc atc ttg ggc cat gtt tct gag ctt ctg cag ggc ata gac cag	7104
Ser Leu Ile Leu Gly His Val Ser Glu Leu Leu Gln Gly Ile Asp Gln	
2355 2360 2365	
gct aag gag gac cta gag cac ctg gcg gcc agc ctg gat gga gcc tgg	7152
Ala Lys Glu Asp Leu Glu His Leu Ala Ala Ser Leu Asp Gly Ala Trp	
2370 2375 2380	
aca ccc tta ctg aag agg atg cag gcc ttt tcc cct gcc agc agc aag	7200
Thr Pro Leu Leu Lys Arg Met Gln Ala Phe Ser Pro Ala Ser Ser Lys	
2385 2390 2395 2400	
gtg gac ttg gta gag gct gct gag gcc cac gct cag aag ctg aac cag	7248
Val Asp Leu Val Glu Ala Ala Glu Ala His Ala Gln Lys Leu Asn Gln	
2405 2410 2415	
ctg gca atc aac ctg tct ggc atc atc ctt ggc atc aat cag gac cgc	7296
Leu Ala Ile Asn Leu Ser Gly Ile Ile Leu Gly Ile Asn Gln Asp Arg	
2420 2425 2430	
ttc atc cag agg gct gtg gaa gcc tcc aat gcc tac agc agc atc ctt	7344
Phe Ile Gln Arg Ala Val Glu Ala Ser Asn Ala Tyr Ser Ser Ile Leu	
2435 2440 2445	
cag gcc gtt cag gct gcc gag gat gcg gca ggc cag gca ctg agg cag	7392
Gln Ala Val Gln Ala Ala Glu Asp Ala Ala Gly Gln Ala Leu Arg Gln	
2450 2455 2460	
gcc agc cgc aca tgg gag atg gtg gtg cag cgg ggc cta gca gct gga	7440
Ala Ser Arg Thr Trp Glu Met Val Val Gln Arg Gly Leu Ala Ala Gly	
2465 2470 2475 2480	
gcc cgg cag ctg tta gcc aac agc agt gcc ctg gag gag acc atc ctt	7488
Ala Arg Gln Leu Leu Ala Asn Ser Ser Ala Leu Glu Glu Thr Ile Leu	
2485 2490 2495	
gga cac cag ggg agg ctg ggc ctt gct cag ggc cgt ctg cag gct gcg	7536
Gly His Gln Gly Arg Leu Gly Leu Ala Gln Gly Arg Leu Gln Ala Ala	
2500 2505 2510	
ggg atc cag ctt cat aat gtc tgg gcc agg aag aac cag cta gca gcc	7584
Gly Ile Gln Leu His Asn Val Trp Ala Arg Lys Asn Gln Leu Ala Ala	
2515 2520 2525	
cag atc cag gag gca caa gcc atg ctg gcc atg gac acg agc gag acc	7632
Gln Ile Gln Glu Ala Gln Ala Met Leu Ala Met Asp Thr Ser Glu Thr	

2530	2535	2540	
agt gag aag att gct cac gcc aag gct gtg gct gcc gaa gcc ctc agt Ser Glu Lys Ile Ala His Ala Lys Ala Val Ala Ala Glu Ala Leu Ser 2545 2550 2555 2560			7680
acg gcc acc cac gtg cag tct cag ctt cag ggt atg cag aag aat gtg Thr Ala Thr His Val Gln Ser Gln Leu Gln Gly Met Gln Lys Asn Val 2565 2570 2575			7728
gag agg tgg cag agc cag ctg gga ggc ctg caa ggc cag gac ctg agc Glu Arg Trp Gln Ser Gln Leu Gly Gly Leu Gln Gly Gln Asp Leu Ser 2580 2585 2590			7776
cag gtg gaa cgg gat gca agc agt tca gtg tcc acc ctg gag aag aca Gln Val Glu Arg Asp Ala Ser Ser Ser Val Ser Thr Leu Glu Lys Thr 2595 2600 2605			7824
ttg cca cag ctg ctg gcc aaa ctg agc cgt cta gag aac cgt gga gtt Leu Pro Gln Leu Leu Ala Lys Leu Ser Arg Leu Glu Asn Arg Gly Val 2610 2615 2620			7872
cac aat gcc agc ctg gct ttg tct gcc aac att ggt cgt gtg cgc aag His Asn Ala Ser Leu Ala Leu Ser Ala Asn Ile Gly Arg Val Arg Lys 2625 2630 2635 2640			7920
ctc att gcc caa gcc cgg agt gcc gcc agc aag gtc aag gtg tcc atg Leu Ile Ala Gln Ala Arg Ser Ala Ala Ser Lys Val Lys Val Ser Met 2645 2650 2655			7968
aag ttc aat ggg cgt tca ggg gta cga ctg cgt ccc cca cga gac ctt Lys Phe Asn Gly Arg Ser Gly Val Arg Leu Arg Pro Pro Arg Asp Leu 2660 2665 2670			8016
gcc gac ctt gct gcg tac act gcc ctc aag ttc cac atc cag agc cca Ala Asp Leu Ala Ala Tyr Thr Ala Leu Lys Phe His Ile Gln Ser Pro 2675 2680 2685			8064
gtg cca gcg ccc gaa cct ggc aag aac acg ggg gac cac ttt gtt ctg Val Pro Ala Pro Glu Pro Gly Lys Asn Thr Gly Asp His Phe Val Leu 2690 2695 2700			8112
tac atg ggc agc cgc cag gcc act ggg gac tac atg gga gtg tct ctg Tyr Met Gly Ser Arg Gln Ala Thr Gly Asp Tyr Met Gly Val Ser Leu 2705 2710 2715 2720			8160
cgt aat cag aag gtg cac tgg gtg tac agg cta gga aag gct ggc ccc Arg Asn Gln Lys Val His Trp Val Tyr Arg Leu Gly Lys Ala Gly Pro 2725 2730 2735			8208
aca act ctc agc atc gac gag aac atc ggg gag cag ttt gca gcc gtc Thr Thr Leu Ser Ile Asp Glu Asn Ile Gly Glu Gln Phe Ala Ala Val 2740 2745 2750			8256
agc atc gac agg acc ctc cag ttt ggc cac atg tct gtc acc gtg gag Ser Ile Asp Arg Thr Leu Gln Phe Gly His Met Ser Val Thr Val Glu 2755 2760 2765			8304
aaa cag atg gtt cat gag atc aag gga gac acg gtg gcc cct ggg agc Lys Gln Met Val His Glu Ile Lys Gly Asp Thr Val Ala Pro Gly Ser 2770 2775 2780			8352





aaa cgg ttg aac acc acg ggc atc agt ttc ggc tgc acc gct gac ctg Lys Arg Leu Asn Thr Thr Gly Ile Ser Phe Gly Cys Thr Ala Asp Leu 3025 3030 3035 3040	9120
cta gtg gga cgc acc atg act ttt cac ggc cac ggc ttc ctg ccc ctg Leu Val Gly Arg Thr Met Thr Phe His Gly His Gly Phe Leu Pro Leu 3045 3050 3055	9168
gca ctt cct gat gtg gca ccc atc acc gaa gtg gtc tat tct ggc ttt Ala Leu Pro Asp Val Ala Pro Ile Thr Glu Val Val Tyr Ser Gly Phe 3060 3065 3070	9216
ggc ttt cgt ggc acc cag gac aac aac ctg ctg tat tac cgt acc tcc Gly Phe Arg Gly Thr Gln Asp Asn Asn Leu Leu Tyr Tyr Arg Thr Ser 3075 3080 3085	9264
ccg gat ggg ccg tac cag gta tcc ctg agg gag ggc cac gtg aca ctc Pro Asp Gly Pro Tyr Gln Val Ser Leu Arg Glu Gly His Val Thr Leu 3090 3095 3100	9312
cgt ttt atg aac caa gag gtg gaa act caa agg gtc ttt gct gat ggt Arg Phe Met Asn Gln Glu Val Glu Thr Gln Arg Val Phe Ala Asp Gly 3105 3110 3115 3120	9360
gct cct cac tat gtt gcc ttc tat agc aat gtc aca ggg gta tgg ctg Ala Pro His Tyr Val Ala Phe Tyr Ser Asn Val Thr Gly Val Trp Leu 3125 3130 3135	9408
tat gtg gat gac cag cta caa cta gta aag tct cat gag aga aca act Tyr Val Asp Asp Gln Leu Gln Leu Val Lys Ser His Glu Arg Thr Thr 3140 3145 3150	9456
ccc atg ctc caa cta cag ccc gag gaa ccc tca cgg ctt ctc ctg gga Pro Met Leu Gln Leu Gln Pro Glu Glu Pro Ser Arg Leu Leu Leu Gly 3155 3160 3165	9504
ggc ctg cct gtg tct ggt acc ttc cac aac ttc agt ggc tgc atc agc Gly Leu Pro Val Ser Gly Thr Phe His Asn Phe Ser Gly Cys Ile Ser 3170 3175 3180	9552
aat gtt ttt gta cag cga ctt cgg gga cca cag cgt gtg ttt gac cta Asn Val Phe Val Gln Arg Leu Arg Gly Pro Gln Arg Val Phe Asp Leu 3185 3190 3195 3200	9600
cac cag aac atg ggg agt gtc aat gta agc gta ggc tgt aca cca gcc His Gln Asn Met Gly Ser Val Asn Val Ser Val Gly Cys Thr Pro Ala 3205 3210 3215	9648
caa ctc atc gag acc tca agg gcc acg gct cag aag gtt tcc cgc cgt Gln Leu Ile Glu Thr Ser Arg Ala Thr Ala Gln Lys Val Ser Arg Arg 3220 3225 3230	9696
agt cga caa ccc agc cag gac ctt gcc tgc acg aca ccc tgg ctc cct Ser Arg Gln Pro Ser Gln Asp Leu Ala Cys Thr Thr Pro Trp Leu Pro 3235 3240 3245	9744
ggg act att cag gat gca tac cag ttt ggg gga ccc ctg ccc agt tac Gly Thr Ile Gln Asp Ala Tyr Gln Phe Gly Gly Pro Leu Pro Ser Tyr 3250 3255 3260	9792
cta cag ttt gtg ggt atc tct ccg tcc cac agg aat agg ctc cac ctc	9840

Leu Gln Phe Val Gly Ile Ser Pro Ser His Arg Asn Arg Leu His Leu	
3265 3270 3275 3280	
tcc atg ctt gtc cgt cca cat gcg gct tcc cag ggc ctc ctg ctc tct	9888
Ser Met Leu Val Arg Pro His Ala Ala Ser Gln Gly Leu Leu Leu Ser	
3285 3290 3295	
aca gcc ccc atg tcg ggc cgc agc cct tcg ttg gta ctc ttt cta aac	9936
Thr Ala Pro Met Ser Gly Arg Ser Pro Ser Leu Val Leu Phe Leu Asn	
3300 3305 3310	
cat gga cac ttt gtc gca cag act gag ggc cct ggg ccc cgg ctc cag	9984
His Gly His Phe Val Ala Gln Thr Glu Gly Pro Gly Pro Arg Leu Gln	
3315 3320 3325	
gtc cag agt cgc cag cac tca cgg gct ggc cag tgg cac agg gtg tcc	10032
Val Gln Ser Arg Gln His Ser Arg Ala Gly Gln Trp His Arg Val Ser	
3330 3335 3340	
gtc cgc tgg gga atg cag cag atc cag ctt gtg gtg gac ggc agc cag	10080
Val Arg Trp Gly Met Gln Gln Ile Gln Leu Val Val Asp Gly Ser Gln	
3345 3350 3355 3360	
acc tgg agc cag aag gct ctc cac cat cgg gtc ccc agg gca gag cga	10128
Thr Trp Ser Gln Lys Ala Leu His His Arg Val Pro Arg Ala Glu Arg	
3365 3370 3375	
cca cag ccc tac acc ctc tct gta gga ggt ctt cct gcc agc agt tac	10176
Pro Gln Pro Tyr Thr Leu Ser Val Gly Gly Leu Pro Ala Ser Ser Tyr	
3380 3385 3390	
agt tcc aag ctc cct gtg tct gtg ggg ttc agc ggc tgt ctg aag aaa	10224
Ser Ser Lys Leu Pro Val Ser Val Gly Phe Ser Gly Cys Leu Lys Lys	
3395 3400 3405	
tta cag ctg gat aag cag cca ctg agg acc cca acg caa atg gtg ggg	10272
Leu Gln Leu Asp Lys Gln Pro Leu Arg Thr Pro Thr Gln Met Val Gly	
3410 3415 3420	
gtc aca ccc tgt gtc tca ggc ccc ctg gaa gat ggc ctg ttc ttc cca	10320
Val Thr Pro Cys Val Ser Gly Pro Leu Glu Asp Gly Leu Phe Phe Pro	
3425 3430 3435 3440	
ggc agt gag gga gtt gtc aca tta gag ctc ccc aag gcc aag atg ccc	10368
Gly Ser Glu Gly Val Val Thr Leu Glu Leu Pro Lys Ala Lys Met Pro	
3445 3450 3455	
tat gtg agc ctg gag cta gag atg cgg ccc ttg gca gct gct ggc ctc	10416
Tyr Val Ser Leu Glu Leu Glu Met Arg Pro Leu Ala Ala Ala Gly Leu	
3460 3465 3470	
atc ttc cac ctg ggc cag gcc ctg gcc act ccc tac atg cag ctg aag	10464
Ile Phe His Leu Gly Gln Ala Leu Ala Thr Pro Tyr Met Gln Leu Lys	
3475 3480 3485	
gtg ctg aca gaa cag gtc ctg ctg cag gca aat gat ggg gca ggg gag	10512
Val Leu Thr Glu Gln Val Leu Leu Gln Ala Asn Asp Gly Ala Gly Glu	
3490 3495 3500	
ttt tcc acg tgg gtg acc tac ccc aag ctt tgt gat gga cgg tgg cac	10560
Phe Ser Thr Trp Val Thr Tyr Pro Lys Leu Cys Asp Gly Arg Trp His	

3505	3510	3515	3520	
cga gtg gca gtg atc atg ggc agg gac aca ctc cgg ctg gag gta gac				10608
Arg Val Ala Val Ile Met Gly Arg Asp Thr Leu Arg Leu Glu Val Asp				
3525		3530	3535	
aca cag agc aac cac acc aca ggc cgt ttg cca gag agc ttg gct ggt				10656
Thr Gln Ser Asn His Thr Thr Gly Arg Leu Pro Glu Ser Leu Ala Gly				
3540		3545	3550	
tct cca gca ctt ctg cac ctc ggg agc ctg ccc aag tct tca act gct				10704
Ser Pro Ala Leu Leu His Leu Gly Ser Leu Pro Lys Ser Ser Thr Ala				
3555		3560	3565	
cgg cca gag ctc cct gcc tac cga gga tgc ttg agg aag ctg ctg atc				10752
Arg Pro Glu Leu Pro Ala Tyr Arg Gly Cys Leu Arg Lys Leu Leu Ile				
3570		3575	3580	
aat ggg gcc cct gtc aac gtg act gct tct gta caa atc cag ggg gca				10800
Asn Gly Ala Pro Val Asn Val Thr Ala Ser Val Gln Ile Gln Gly Ala				
3585		3590	3595	3600
gtg ggg atg cgc gga tgc ccc tca gga acc cta gca ctt tcc aag cag				10848
Val Gly Met Arg Gly Cys Pro Ser Gly Thr Leu Ala Leu Ser Lys Gln				
3605		3610	3615	
gga aag gca ctg acc cag agg cac gcc aag ccc agt gtc tcc ccg cta				10896
Gly Lys Ala Leu Thr Gln Arg His Ala Lys Pro Ser Val Ser Pro Leu				
3620		3625	3630	
ctt tgg cat tgaggggtcc cagaccttgg gggttgcccta cactttctat				10945
Leu Trp His				
3635				
gaataacaag tcatttctgg ttacactgt cttttagagg aaaaggactc tgtagaacag				11005
atat				11009
<210> 4				
<211> 3635				
<212> PRT				
<213> Mus musculus				
<400> 4				
Asp Leu Tyr Cys Lys Leu Val Gly Gly Pro Val Ala Gly Gly Asp Pro				
1	5	10	15	
Asn Gln Thr Ile Gln Gly Gln Tyr Cys Asp Ile Cys Thr Ala Ala Asn				
20	25	30		
Ser Asn Lys Ala His Pro Val Ser Asn Ala Ile Asp Gly Thr Glu Arg				
35	40	45		
Trp Trp Gln Ser Pro Pro Leu Ser Arg Gly Leu Glu Tyr Asn Glu Val				
50	55	60		
Asn Val Thr Leu Asp Leu Gly Gln Val Phe His Val Ala Tyr Val Leu				
65	70	75	80	
Ile Lys Phe Ala Asn Ser Pro Arg Pro Asp Leu Trp Val Leu Glu Arg				

				85				90				95					
Ser	Thr	Asp	Phe	Gly	His	Thr	Tyr	Gln	Pro	Trp	Gln	Phe	Phe	Ala	Ser		
			100				105						110				
Ser	Lys	Arg	Asp	Cys	Leu	Glu	Arg	Phe	Gly	Pro	Arg	Thr	Leu	Glu	Arg		
			115				120						125				
Ile	Thr	Gln	Asp	Asp	Asp	Val	Ile	Cys	Thr	Thr	Glu	Tyr	Ser	Arg	Ile		
			130				135						140				
Val	Pro	Leu	Glu	Asn	Gly	Glu	Ile	Val	Val	Ser	Leu	Val	Asn	Gly	Arg		
145						150						155			160		
Pro	Gly	Ala	Leu	Asn	Phe	Ser	Tyr	Ser	Pro	Leu	Leu	Arg	Asp	Phe	Thr		
			165						170						175		
Lys	Ala	Thr	Asn	Ile	Arg	Leu	Arg	Phe	Leu	Arg	Thr	Asn	Thr	Leu	Leu		
			180						185						190		
Gly	His	Leu	Met	Gly	Lys	Ala	Leu	Arg	Asp	Pro	Thr	Val	Thr	Arg	Arg		
			195						200						205		
Tyr	Tyr	Tyr	Ser	Ile	Lys	Asp	Ile	Ser	Ile	Gly	Gly	Arg	Cys	Val	Cys		
210						215						220					
His	Gly	His	Ala	Asp	Val	Cys	Asp	Ala	Lys	Asp	Pro	Leu	Asp	Pro	Phe		
225						230						235			240		
Arg	Leu	Gln	Cys	Ala	Cys	Gln	His	Asn	Thr	Cys	Gly	Gly	Ser	Cys	Asp		
			245						250						255		
Arg	Cys	Cys	Pro	Gly	Phe	Asn	Gln	Gln	Pro	Trp	Lys	Pro	Ala	Thr	Thr		
			260						265						270		
Asp	Ser	Ala	Asn	Glu	Cys	Gln	Ser	Cys	Asn	Cys	His	Gly	His	Ala	Tyr		
275						280						285					
Asp	Cys	Tyr	Tyr	Asp	Pro	Glu	Val	Asp	Arg	Arg	Asn	Ala	Ser	Gln	Asn		
290						295						300					
Gln	Asp	Asn	Val	Tyr	Gln	Gly	Gly	Gly	Val	Cys	Leu	Asp	Cys	Gln	His		
305						310						315			320		
His	Thr	Thr	Gly	Ile	Asn	Cys	Glu	Arg	Cys	Leu	Pro	Gly	Phe	Phe	Arg		
			325						330						335		
Ala	Pro	Asp	Gln	Pro	Leu	Asp	Ser	Pro	His	Val	Cys	Arg	Pro	Cys	Asp		
			340						345						350		
Cys	Glu	Ser	Asp	Phe	Thr	Asp	Gly	Thr	Cys	Glu	Asp	Leu	Thr	Gly	Arg		
			355						360						365		
Cys	Tyr	Cys	Arg	Pro	Asn	Phe	Thr	Gly	Glu	Leu	Cys	Ala	Ala	Cys	Ala		
370						375						380					
Glu	Gly	Tyr	Thr	Asp	Phe	Pro	His	Cys	Tyr	Pro	Leu	Pro	Ser	Phe	Pro		
385						390						395			400		
His	Asn	Asp	Thr	Arg	Glu	Gln	Val	Leu	Pro	Ala	Gly	Gln	Ile	Val	Asn		
			405						410						415		



Phe	Phe	Gly	Leu	Asp	Tyr	Ala	Asp	Tyr	Phe	Gly	Cys	Arg	Ser	Cys	Arg		
			740					745					750				
Cys	Asp	Val	Gly	Gly	Ala	Leu	Gly	Gln	Gly	Cys	Glu	Pro	Lys	Thr	Gly		
		755					760					765					
Ala	Cys	Arg	Cys	Arg	Pro	Asn	Thr	Gln	Gly	Pro	Thr	Cys	Ser	Glu	Pro		
	770					775					780						
Ala	Lys	Asp	His	Tyr	Leu	Pro	Asp	Leu	His	His	Met	Arg	Leu	Glu	Leu		
785					790					795					800		
Glu	Glu	Ala	Ala	Thr	Pro	Glu	Gly	His	Ala	Val	Arg	Phe	Gly	Phe	Asn		
				805					810					815			
Pro	Leu	Glu	Phe	Glu	Asn	Phe	Ser	Trp	Arg	Gly	Tyr	Ala	His	Met	Met		
			820					825					830				
Ala	Ile	Gln	Pro	Arg	Ile	Val	Ala	Arg	Leu	Asn	Val	Thr	Ser	Pro	Asp		
		835					840					845					
Leu	Phe	Arg	Leu	Val	Phe	Arg	Tyr	Val	Asn	Arg	Gly	Ser	Thr	Ser	Val		
	850					855					860						
Asn	Gly	Gln	Ile	Ser	Val	Arg	Glu	Glu	Gly	Lys	Leu	Ser	Ser	Cys	Thr		
865					870					875					880		
Asn	Cys	Thr	Glu	Gln	Ser	Gln	Pro	Val	Ala	Phe	Pro	Pro	Ser	Thr	Glu		
				885					890					895			
Pro	Ala	Phe	Val	Thr	Val	Pro	Gln	Arg	Gly	Phe	Gly	Glu	Pro	Phe	Val		
			900					905					910				
Leu	Asn	Pro	Gly	Ile	Trp	Ala	Leu	Val	Glu	Ala	Glu	Gly	Val	Leu			
		915				920					925						
Leu	Asp	Tyr	Val	Val	Leu	Leu	Pro	Ser	Thr	Tyr	Tyr	Glu	Ala	Ala	Leu		
	930					935					940						
Leu	Gln	His	Arg	Val	Thr	Glu	Ala	Cys	Thr	Tyr	Arg	Pro	Ser	Ala	Leu		
945					950					955					960		
His	Ser	Thr	Glu	Asn	Cys	Leu	Val	Tyr	Ala	His	Leu	Pro	Leu	Asp	Gly		
				965					970					975			
Phe	Pro	Ser	Ala	Ala	Gly	Thr	Glu	Ala	Leu	Cys	Arg	His	Asp	Asn	Ser		
			980					985					990				
Leu	Pro	Arg	Pro	Cys	Pro	Thr	Glu	Gln	Leu	Ser	Pro	Ser	His	Pro	Pro		
		995				1000						1005					
Leu	Ala	Thr	Cys	Phe	Gly	Ser	Asp	Val	Asp	Ile	Gln	Leu	Glu	Met	Ala		
	1010					1015					1020						
Val	Pro	Gln	Pro	Gly	Gln	Tyr	Val	Leu	Val	Val	Glu	Tyr	Val	Gly	Glu		
1025					1030					1035					1040		
Asp	Ser	His	Gln	Glu	Met	Gly	Val	Ala	Val	His	Thr	Pro	Gln	Arg	Ala		
			1045					1050						1055			
Pro	Gln	Gln	Gly	Val	Leu	Asn	Leu	His	Pro	Cys	Pro	Tyr	Ser	Ser	Leu		

1060	1065	1070
Cys Arg Ser Pro Ala Arg Asp Thr Gln His His Leu Ala Ile Phe His 1075	1080	1085
Leu Asp Ser Glu Ala Ser Ile Arg Leu Thr Ala Glu Gln Ala His Phe 1090	1095	1100
Phe Leu His Ser Val Thr Leu Val Pro Val Glu Glu Phe Ser Thr Glu 1105	1110	1115 1120
Phe Val Glu Pro Arg Val Phe Cys Val Ser Ser His Gly Thr Phe Asn 1125	1130	1135
Pro Ser Ser Ala Ala Cys Leu Ala Ser Arg Phe Pro Lys Pro Pro Gln 1140	1145	1150
Pro Ile Ile Leu Lys Asp Cys Gln Val Leu Pro Leu Pro Pro Asp Leu 1155	1160	1165
Pro Leu Thr Gln Ser Gln Glu Leu Ser Pro Gly Ala Pro Pro Glu Gly 1170	1175	1180
Pro Gln Pro Arg Pro Pro Thr Ala Val Asp Pro Asn Ala Glu Pro Thr 1185	1190	1195 1200
Leu Leu Arg His Pro Gln Gly Thr Val Val Phe Thr Thr Gln Val Pro 1205	1210	1215
Thr Leu Gly Arg Tyr Ala Phe Leu Leu His Gly Tyr Gln Pro Val His 1220	1225	1230
Pro Ser Phe Pro Val Glu Val Leu Ile Asn Gly Gly Arg Ile Trp Gln 1235	1240	1245
Gly His Ala Asn Ala Ser Phe Cys Pro His Gly Tyr Gly Cys Arg Thr 1250	1255	1260
Leu Val Leu Cys Glu Gly Gln Thr Met Leu Asp Val Thr Asp Asn Glu 1265	1270	1275 1280
Leu Thr Val Thr Val Arg Val Pro Glu Gly Arg Trp Leu Trp Leu Asp 1285	1290	1295
Tyr Val Leu Ile Val Pro Glu Asp Ala Tyr Ser Ser Ser Tyr Leu Gln 1300	1305	1310
Glu Glu Pro Leu Asp Lys Ser Tyr Asp Phe Ile Ser His Cys Ala Thr 1315	1320	1325
Gln Gly Tyr His Ile Ser Pro Ser Ser Ser Ser Pro Phe Cys Arg Asn 1330	1335	1340
Ala Ala Thr Ser Leu Ser Leu Phe Tyr Asn Asn Gly Ala Leu Pro Cys 1345	1350	1355 1360
Gly Cys His Glu Val Gly Ala Val Ser Pro Thr Cys Glu Pro Phe Gly 1365	1370	1375
Gly Gln Cys Pro Cys Arg Gly His Val Ile Gly Arg Asp Cys Ser Arg 1380	1385	1390





Ile Arg Ala Leu Phe Ser Gln Thr Ser Ser Ser Val Ser Leu Arg Arg  
1715 1720 1725

Val Val Leu Glu Val Ala Ser Glu Ala Gly Arg Gly Pro Pro Ala Ser  
1730 1735 1740

Asn Val Glu Leu Cys Met Cys Pro Ala Asn Tyr Arg Gly Asp Ser Cys  
1745 1750 1755 1760

Gln Glu Cys Ala Pro Gly Tyr Tyr Arg Asp Thr Lys Gly Leu Phe Leu  
1765 1770 1775

Gly Arg Cys Val Pro Cys Gln Cys His Gly His Ser Asp Arg Cys Leu  
1780 1785 1790

Pro Gly Ser Gly Ile Cys Val Gly Cys Gln His Asn Thr Glu Gly Asp  
1795 1800 1805

Gln Cys Glu Arg Cys Arg Pro Gly Phe Val Ser Ser Asp Pro Ser Asn  
1810 1815 1820

Pro Ala Ser Pro Cys Val Ser Cys Pro Cys Pro Leu Ala Val Pro Ser  
1825 1830 1835 1840

Asn Asn Phe Ala Asp Gly Cys Val Leu Arg Asn Gly Arg Thr Gln Cys  
1845 1850 1855

Leu Cys Arg Pro Gly Tyr Ala Gly Ala Ser Cys Glu Arg Cys Ala Pro  
1860 1865 1870

Gly Phe Phe Gly Asn Pro Leu Val Leu Gly Ser Ser Cys Gln Pro Cys  
1875 1880 1885

Asp Cys Ser Gly Asn Gly Asp Pro Asn Met Ile Phe Ser Asp Cys Asp  
1890 1895 1900

Pro Leu Thr Gly Ala Cys Arg Gly Cys Leu Arg His Thr Thr Gly Pro  
1905 1910 1915 1920

His Cys Glu Arg Cys Ala Pro Gly Phe Tyr Gly Asn Ala Leu Leu Pro  
1925 1930 1935

Gly Asn Cys Thr Arg Cys Asp Cys Ser Pro Cys Gly Thr Glu Thr Cys  
1940 1945 1950

Asp Pro Gln Ser Gly Arg Cys Leu Cys Lys Ala Gly Val Thr Gly Gln  
1955 1960 1965

Arg Cys Asp Arg Cys Leu Glu Gly Tyr Phe Gly Phe Glu Gln Cys Gln  
1970 1975 1980

Gly Cys Arg Pro Cys Ala Cys Gly Pro Ala Ala Lys Gly Ser Glu Cys  
1985 1990 1995 2000

His Pro Gln Ser Gly Gln Cys His Cys Gln Pro Gly Thr Thr Gly Pro  
2005 2010 2015

Gln Cys Leu Glu Cys Ala Pro Gly Tyr Trp Gly Leu Pro Glu Lys Gly  
2020 2025 2030

Cys Arg Arg Cys Gln Cys Pro Arg Gly His Cys Asp Pro His Thr Gly

2035	2040	2045
His Cys Thr Cys Pro Pro Gly Leu Ser Gly Glu Arg Cys Asp Thr Cys		
2050	2055	2060
Ser Gln Gln His Gln Val Pro Val Pro Gly Lys Pro Gly Gly His Gly		
2065	2070	2075 2080
Ile His Cys Glu Val Cys Asp His Cys Val Val Leu Leu Leu Asp Asp		
2085	2090	2095
Leu Glu Arg Ala Gly Ala Leu Leu Pro Ala Ile Arg Glu Gln Leu Gln		
2100	2105	2110
Gly Ile Asn Ala Ser Ser Ala Ala Trp Ala Arg Leu His Arg Leu Asn		
2115	2120	2125
Ala Ser Ile Ala Asp Leu Gln Ser Lys Leu Arg Arg Pro Pro Gly Pro		
2130	2135	2140
Arg Tyr Gln Ala Ala Gln Gln Leu Gln Thr Leu Glu Gln Gln Ser Ile		
2145	2150	2155 2160
Ser Leu Gln Gln Asp Thr Glu Arg Leu Gly Ser Gln Ala Thr Gly Val		
2165	2170	2175
Gln Gly Gln Ala Gly Gln Leu Leu Asp Thr Thr Glu Ser Thr Leu Gly		
2180	2185	2190
Arg Ala Gln Lys Leu Leu Glu Ser Val Arg Ala Val Gly Arg Ala Leu		
2195	2200	2205
Asn Glu Leu Ala Ser Arg Met Gly Gln Gly Ser Pro Gly Asp Ala Leu		
2210	2215	2220
Val Pro Ser Gly Glu Gln Leu Arg Trp Ala Leu Ala Glu Val Glu Arg		
2225	2230	2235 2240
Leu Leu Trp Asp Met Arg Thr Arg Asp Leu Gly Ala Gln Gly Ala Val		
2245	2250	2255
Ala Glu Ala Glu Leu Ala Glu Ala Gln Arg Leu Met Ala Arg Val Gln		
2260	2265	2270
Glu Gln Leu Thr Ser Phe Trp Glu Glu Asn Gln Ser Leu Ala Thr His		
2275	2280	2285
Ile Arg Asp Gln Leu Ala Gln Tyr Glu Ser Gly Leu Met Asp Leu Arg		
2290	2295	2300
Glu Ala Leu Asn Gln Ala Val Asn Thr Thr Arg Glu Ala Glu Glu Leu		
2305	2310	2315 2320
Asn Ser Arg Asn Gln Glu Arg Val Lys Glu Ala Leu Gln Trp Lys Gln		
2325	2330	2335
Glu Leu Ser Gln Asp Asn Ala Thr Leu Lys Ala Thr Leu Gln Ala Ala		
2340	2345	2350
Ser Leu Ile Leu Gly His Val Ser Glu Leu Leu Gln Gly Ile Asp Gln		
2355	2360	2365

Ala Lys Glu Asp Leu Glu His Leu Ala Ala Ser Leu Asp Gly Ala Trp  
 2370 2375 2380

Thr Pro Leu Leu Lys Arg Met Gln Ala Phe Ser Pro Ala Ser Ser Lys  
 2385 2390 2395 2400

Val Asp Leu Val Glu Ala Ala Glu Ala His Ala Gln Lys Leu Asn Gln  
 2405 2410 2415

Leu Ala Ile Asn Leu Ser Gly Ile Ile Leu Gly Ile Asn Gln Asp Arg  
 2420 2425 2430

Phe Ile Gln Arg Ala Val Glu Ala Ser Asn Ala Tyr Ser Ser Ile Leu  
 2435 2440 2445

Gln Ala Val Gln Ala Ala Glu Asp Ala Ala Gly Gln Ala Leu Arg Gln  
 2450 2455 2460

Ala Ser Arg Thr Trp Glu Met Val Val Gln Arg Gly Leu Ala Ala Gly  
 2465 2470 2475 2480

Ala Arg Gln Leu Leu Ala Asn Ser Ser Ala Leu Glu Glu Thr Ile Leu  
 2485 2490 2495

Gly His Gln Gly Arg Leu Gly Leu Ala Gln Gly Arg Leu Gln Ala Ala  
 2500 2505 2510

Gly Ile Gln Leu His Asn Val Trp Ala Arg Lys Asn Gln Leu Ala Ala  
 2515 2520 2525

Gln Ile Gln Glu Ala Gln Ala Met Leu Ala Met Asp Thr Ser Glu Thr  
 2530 2535 2540

Ser Glu Lys Ile Ala His Ala Lys Ala Val Ala Ala Glu Ala Leu Ser  
 2545 2550 2555 2560

Thr Ala Thr His Val Gln Ser Gln Leu Gln Gly Met Gln Lys Asn Val  
 2565 2570 2575

Glu Arg Trp Gln Ser Gln Leu Gly Gly Leu Gln Gly Gln Asp Leu Ser  
 2580 2585 2590

Gln Val Glu Arg Asp Ala Ser Ser Ser Val Ser Thr Leu Glu Lys Thr  
 2595 2600 2605

Leu Pro Gln Leu Leu Ala Lys Leu Ser Arg Leu Glu Asn Arg Gly Val  
 2610 2615 2620

His Asn Ala Ser Leu Ala Leu Ser Ala Asn Ile Gly Arg Val Arg Lys  
 2625 2630 2635 2640

Leu Ile Ala Gln Ala Arg Ser Ala Ala Ser Lys Val Lys Val Ser Met  
 2645 2650 2655

Lys Phe Asn Gly Arg Ser Gly Val Arg Leu Arg Pro Pro Arg Asp Leu  
 2660 2665 2670

Ala Asp Leu Ala Ala Tyr Thr Ala Leu Lys Phe His Ile Gln Ser Pro  
 2675 2680 2685

Val	Pro	Ala	Pro	Glu	Pro	Gly	Lys	Asn	Thr	Gly	Asp	His	Phe	Val	Leu	2690	2695	2700
Tyr	Met	Gly	Ser	Arg	Gln	Ala	Thr	Gly	Asp	Tyr	Met	Gly	Val	Ser	Leu	2705	2710	2715 2720
Arg	Asn	Gln	Lys	Val	His	Trp	Val	Tyr	Arg	Leu	Gly	Lys	Ala	Gly	Pro	2725	2730	2735
Thr	Thr	Leu	Ser	Ile	Asp	Glu	Asn	Ile	Gly	Glu	Gln	Phe	Ala	Ala	Val	2740	2745	2750
Ser	Ile	Asp	Arg	Thr	Leu	Gln	Phe	Gly	His	Met	Ser	Val	Thr	Val	Glu	2755	2760	2765
Lys	Gln	Met	Val	His	Glu	Ile	Lys	Gly	Asp	Thr	Val	Ala	Pro	Gly	Ser	2770	2775	2780
Glu	Gly	Leu	Leu	Asn	Leu	His	Pro	Asp	Asp	Phe	Val	Phe	Tyr	Val	Gly	2785	2790	2795 2800
Gly	Tyr	Pro	Ser	Asn	Phe	Thr	Pro	Pro	Glu	Pro	Leu	Arg	Phe	Pro	Gly	2805	2810	2815
Tyr	Leu	Gly	Cys	Ile	Glu	Met	Glu	Thr	Leu	Asn	Glu	Glu	Val	Val	Ser	2820	2825	2830
Leu	Tyr	Asn	Phe	Glu	Gln	Thr	Phe	Met	Leu	Asp	Thr	Ala	Val	Asp	Lys	2835	2840	2845
Pro	Cys	Ala	Arg	Ser	Lys	Ala	Thr	Gly	Asp	Pro	Trp	Leu	Thr	Asp	Gly	2850	2855	2860
Ser	Tyr	Leu	Asp	Gly	Ser	Gly	Phe	Ala	Arg	Ile	Ser	Phe	Glu	Lys	Gln	2865	2870	2875 2880
Phe	Ser	Asn	Thr	Lys	Arg	Phe	Asp	Gln	Glu	Leu	Arg	Leu	Val	Ser	Tyr	2885	2890	2895
Asn	Gly	Ile	Ile	Phe	Phe	Leu	Lys	Gln	Glu	Ser	Gln	Phe	Leu	Cys	Leu	2900	2905	2910
Ala	Val	Gln	Glu	Gly	Thr	Leu	Val	Leu	Phe	Tyr	Asp	Phe	Gly	Ser	Gly	2915	2920	2925
Leu	Lys	Lys	Ala	Asp	Pro	Leu	Gln	Pro	Pro	Gln	Ala	Leu	Thr	Ala	Ala	2930	2935	2940
Ser	Lys	Ala	Ile	Gln	Val	Phe	Leu	Leu	Ala	Gly	Asn	Arg	Lys	Arg	Val	2945	2950	2955 2960
Leu	Val	Arg	Val	Glu	Arg	Ala	Thr	Val	Phe	Ser	Val	Asp	Gln	Asp	Asn	2965	2970	2975
Met	Leu	Glu	Met	Ala	Asp	Ala	Tyr	Tyr	Leu	Gly	Gly	Val	Pro	Pro	Glu	2980	2985	2990
Gln	Leu	Pro	Leu	Ser	Leu	Arg	Gln	Leu	Phe	Pro	Ser	Gly	Gly	Ser	Val	2995	3000	3005
Arg	Gly	Cys	Ile	Lys	Gly	Ile	Lys	Ala	Leu	Gly	Lys	Tyr	Val	Asp	Leu			



Val Arg Trp Gly Met Gln Gln Ile Gln Leu Val Val Asp Gly Ser Gln  
 3345 3350 3355 3360

Thr Trp Ser Gln Lys Ala Leu His His Arg Val Pro Arg Ala Glu Arg  
 3365 3370 3375

Pro Gln Pro Tyr Thr Leu Ser Val Gly Gly Leu Pro Ala Ser Ser Tyr  
 3380 3385 3390

Ser Ser Lys Leu Pro Val Ser Val Gly Phe Ser Gly Cys Leu Lys Lys  
 3395 3400 3405

Leu Gln Leu Asp Lys Gln Pro Leu Arg Thr Pro Thr Gln Met Val Gly  
 3410 3415 3420

Val Thr Pro Cys Val Ser Gly Pro Leu Glu Asp Gly Leu Phe Phe Pro  
 3425 3430 3435 3440

Gly Ser Glu Gly Val Val Thr Leu Glu Leu Pro Lys Ala Lys Met Pro  
 3445 3450 3455

Tyr Val Ser Leu Glu Leu Glu Met Arg Pro Leu Ala Ala Ala Gly Leu  
 3460 3465 3470

Ile Phe His Leu Gly Gln Ala Leu Ala Thr Pro Tyr Met Gln Leu Lys  
 3475 3480 3485

Val Leu Thr Glu Gln Val Leu Leu Gln Ala Asn Asp Gly Ala Gly Glu  
 3490 3495 3500

Phe Ser Thr Trp Val Thr Tyr Pro Lys Leu Cys Asp Gly Arg Trp His  
 3505 3510 3515 3520

Arg Val Ala Val Ile Met Gly Arg Asp Thr Leu Arg Leu Glu Val Asp  
 3525 3530 3535

Thr Gln Ser Asn His Thr Thr Gly Arg Leu Pro Glu Ser Leu Ala Gly  
 3540 3545 3550

Ser Pro Ala Leu Leu His Leu Gly Ser Leu Pro Lys Ser Ser Thr Ala  
 3555 3560 3565

Arg Pro Glu Leu Pro Ala Tyr Arg Gly Cys Leu Arg Lys Leu Leu Ile  
 3570 3575 3580

Asn Gly Ala Pro Val Asn Val Thr Ala Ser Val Gln Ile Gln Gly Ala  
 3585 3590 3595 3600

Val Gly Met Arg Gly Cys Pro Ser Gly Thr Leu Ala Leu Ser Lys Gln  
 3605 3610 3615

Gly Lys Ala Leu Thr Gln Arg His Ala Lys Pro Ser Val Ser Pro Leu  
 3620 3625 3630

Leu Trp His  
 3635

<210> 5

<211> 5613

<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (118)..(5475)

<220>  
<221> sig\_peptide  
<222> (118)..(180)

<400> 5  
cccggagcag ggcgagagct cgcgtcgccg gaaaggaaga cggaagaaa gggcaggcgg 60  
  
ctcggcgggc gtcttctcca ctctctgcc gcgtccccgt ggctgcaggg agccggc 117  
  
atg ggg ctt ctc cag ttg cta gct ttc agt ttc tta gcc ctg tgc aga 165  
Met Gly Leu Leu Gln Leu Leu Ala Phe Ser Phe Leu Ala Leu Cys Arg  
1 5 10 15  
  
gcc cga gtg cgc gct cag gaa ccc gag ttc agc tac ggc tgc gca gaa 213  
Ala Arg Val Arg Ala Gln Glu Pro Glu Phe Ser Tyr Gly Cys Ala Glu  
20 25 30  
  
ggc agc tgc tat ccc gcc acg ggc gac ctt ctc atc ggc cga gca cag 261  
Gly Ser Cys Tyr Pro Ala Thr Gly Asp Leu Leu Ile Gly Arg Ala Gln  
35 40 45  
  
aag ctt tcg gtg acc tcg acg tgc ggg ctg cac aag ccc gaa ccc tac 309  
Lys Leu Ser Val Thr Ser Thr Cys Gly Leu His Lys Pro Glu Pro Tyr  
50 55 60  
  
tgt atc gtc agc cac ttg cag gag gac aaa aaa tgc ttc ata tgc aat 357  
Cys Ile Val Ser His Leu Gln Glu Asp Lys Lys Cys Phe Ile Cys Asn  
65 70 75 80  
  
tcc caa gat cct tat cat gag acc ctg aat cct gac agc cat ctc att 405  
Ser Gln Asp Pro Tyr His Glu Thr Leu Asn Pro Asp Ser His Leu Ile  
85 90 95  
  
gaa aat gtg gtc act aca ttt gct cca aac cgc ctt aag att tgg tgg 453  
Glu Asn Val Val Thr Phe Ala Pro Asn Arg Leu Lys Ile Trp Trp  
100 105 110  
  
caa tct gaa aat ggt gtg gaa aat gta act atc caa ctg gat ttg gaa 501  
Gln Ser Glu Asn Gly Val Glu Asn Val Thr Ile Gln Leu Asp Leu Glu  
115 120 125  
  
gca gaa ttc cat ttt act cat ctc ata atg act ttc aag aca ttc cgt 549  
Ala Glu Phe His Phe Thr His Leu Ile Met Thr Phe Lys Thr Phe Arg  
130 135 140  
  
cca gct gct atg ctg ata gaa cga tcg tcc gac ttt ggg aaa acc tgg 597  
Pro Ala Ala Met Leu Ile Glu Arg Ser Ser Asp Phe Gly Lys Thr Trp  
145 150 155 160  
  
ggt gtg tat aga tac ttc gcc tat gac tgt gag gcc tcg ttt cca ggc 645  
Gly Val Tyr Arg Tyr Phe Ala Tyr Asp Cys Glu Ala Ser Phe Pro Gly  
165 170 175  
  
att tca act ggc ccc atg aaa aaa gtc gat gac ata att tgt gat tct 693

Ile Ser Thr Gly Pro Met Lys Lys Val Asp Asp Ile Ile Cys Asp Ser	
180 185 190	
cga tat tct gac att gaa ccc tca act gaa gga gag gtg ata ttt cgt	741
Arg Tyr Ser Asp Ile Glu Pro Ser Thr Glu Gly Glu Val Ile Phe Arg	
195 200 205	
gct tta gat cct gct ttc aaa ata gaa gat cct tat agc cca agg ata	789
Ala Leu Asp Pro Ala Phe Lys Ile Glu Asp Pro Tyr Ser Pro Arg Ile	
210 215 220	
cag aat tta tta aaa att acc aac ttg aga atc aag ttt gtg aaa ctg	837
Gln Asn Leu Leu Lys Ile Thr Asn Leu Arg Ile Lys Phe Val Lys Leu	
225 230 235 240	
cat act ttg gga gat aac ctt ctg gat tcc agg atg gaa atc aga gaa	885
His Thr Leu Gly Asp Asn Leu Leu Asp Ser Arg Met Glu Ile Arg Glu	
245 250 255	
aag tat tat tat gca gtt tat gat atg gtg gtt cga gga aat tgc ttc	933
Lys Tyr Tyr Tyr Ala Val Tyr Asp Met Val Val Arg Gly Asn Cys Phe	
260 265 270	
tgc tat ggt cat gcc agc gaa tgt gcc cct gtg gat gga ttc aat gaa	981
Cys Tyr Gly His Ala Ser Glu Cys Ala Pro Val Asp Gly Phe Asn Glu	
275 280 285	
gaa gtg gaa gga atg gtt cac gga cac tgc atg tgc agg cat aac acc	1029
Glu Val Glu Gly Met Val His Gly His Cys Met Cys Arg His Asn Thr	
290 295 300	
aag ggc tta aac tgt gaa ctc tgc atg gat ttc tac cat gat tta cct	1077
Lys Gly Leu Asn Cys Glu Leu Cys Met Asp Phe Tyr His Asp Leu Pro	
305 310 315 320	
tgg aga cct gct gaa ggc cga aac agc aac gcc tgt aaa aaa tgt aac	1125
Trp Arg Pro Ala Glu Gly Arg Asn Ser Asn Ala Cys Lys Lys Cys Asn	
325 330 335	
tgc aat gaa cat tcc atc tct tgt cac ttt gac atg gct gtt tac ctg	1173
Cys Asn Glu His Ser Ile Ser Cys His Phe Asp Met Ala Val Tyr Leu	
340 345 350	
gcc acg ggg aac gtc agc gga ggc gtg tgt gat gac tgt cag cac aac	1221
Ala Thr Gly Asn Val Ser Gly Gly Val Cys Asp Asp Cys Gln His Asn	
355 360 365	
acc atg ggg cgc aac tgt gag cag tgc aag ccg ttt tac tac cag cac	1269
Thr Met Gly Arg Asn Cys Glu Gln Cys Lys Pro Phe Tyr Tyr Gln His	
370 375 380	
cca gag agg gac atc cga gat cct aat ttc tgt gaa cga tgt acg tgt	1317
Pro Glu Arg Asp Ile Arg Asp Pro Asn Phe Cys Glu Arg Cys Thr Cys	
385 390 395 400	
gac cca gct ggc tct caa aat gag gga att tgt gac agc tat act gat	1365
Asp Pro Ala Gly Ser Gln Asn Glu Gly Ile Cys Asp Ser Tyr Thr Asp	
405 410 415	
ttt tct act ggt ctc att gct ggc cag tgt cgg tgt aaa tta aat gtg	1413
Phe Ser Thr Gly Leu Ile Ala Gly Gln Cys Arg Cys Lys Leu Asn Val	



420										425					430					
gaa	gga	gaa	cat	tgt	gat	gtt	tgc	aaa	gaa	ggc	ttc	tat	gat	tta	agc	1461				
Glu	Gly	Glu	His	Cys	Asp	Val	Cys	Lys	Glu	Gly	Phe	Tyr	Asp	Leu	Ser					
435						440			445											
agt	gaa	gat	cca	ttt	ggg	tgt	aaa	tct	tgt	gct	tgc	aat	cct	ctg	gga	1509				
Ser	Glu	Asp	Pro	Phe	Gly	Cys	Lys	Ser	Cys	Ala	Cys	Asn	Pro	Leu	Gly					
450						455			460											
aca	att	cct	gga	ggg	aat	cct	tgt	gat	tcc	gag	aca	ggg	cac	tgc	tac	1557				
Thr	Ile	Pro	Gly	Gly	Asn	Pro	Cys	Asp	Ser	Glu	Thr	Gly	His	Cys	Tyr					
465						470			475			480								
tgc	aag	cgt	ctg	gtg	aca	gga	cag	cat	tgt	gac	cag	tgc	ctg	cca	gag	1605				
Cys	Lys	Arg	Leu	Val	Thr	Gly	Gln	His	Cys	Asp	Gln	Cys	Leu	Pro	Glu					
			485						490			495								
cac	tgg	ggc	tta	agc	aat	gat	ttg	gat	gga	tgt	cga	cca	tgt	gac	tgt	1653				
His	Trp	Gly	Leu	Ser	Asn	Asp	Leu	Asp	Gly	Cys	Arg	Pro	Cys	Asp	Cys					
			500						505			510								
gac	ctt	ggg	gga	gcc	tta	aac	aac	agt	tgc	ttt	gcg	gag	tca	ggc	cag	1701				
Asp	Leu	Gly	Gly	Ala	Leu	Asn	Asn	Ser	Cys	Phe	Ala	Glu	Ser	Gly	Gln					
515						520						525								
tgc	tca	tgc	cgg	cct	cac	atg	att	gga	cgt	cag	tgc	aac	gaa	gtg	gaa	1749				
Cys	Ser	Cys	Arg	Pro	His	Met	Ile	Gly	Arg	Gln	Cys	Asn	Glu	Val	Glu					
530						535			540											
cct	ggg	tac	tac	ttt	gcc	acc	ctg	gat	cac	tac	ctc	tat	gaa	gcg	gag	1797				
Pro	Gly	Tyr	Tyr	Phe	Ala	Thr	Leu	Asp	His	Tyr	Leu	Tyr	Glu	Ala	Glu					
545						550			555			560								
gaa	gcc	aac	ttg	ggg	cct	ggg	gtt	agc	ata	gtg	gag	cgg	caa	tat	atc	1845				
Glu	Ala	Asn	Leu	Gly	Pro	Gly	Val	Ser	Ile	Val	Glu	Arg	Gln	Tyr	Ile					
			565						570			575								
cag	gac	cgg	att	ccc	tcc	tgg	act	gga	gcc	ggc	ttc	gtc	cga	gtg	cct	1893				
Gln	Asp	Arg	Ile	Pro	Ser	Trp	Thr	Gly	Ala	Gly	Phe	Val	Arg	Val	Pro					
			580						585			590								
gaa	ggg	gct	tat	ttg	gag	ttt	ttc	att	gac	aac	ata	cca	tat	tcc	atg	1941				
Glu	Gly	Ala	Tyr	Leu	Glu	Phe	Phe	Ile	Asp	Asn	Ile	Pro	Tyr	Ser	Met					
595						600						605								
gag	tac	gac	atc	cta	att	cgc	tac	gag	cca	cag	cta	ccc	gac	cac	tgg	1989				
Glu	Tyr	Asp	Ile	Leu	Ile	Arg	Tyr	Glu	Pro	Gln	Leu	Pro	Asp	His	Trp					
610						615						620								
gaa	aaa	gct	gtc	atc	aca	gtg	cag	cga	cct	gga	agg	att	cca	acc	agc	2037				
Glu	Lys	Ala	Val	Ile	Thr	Val	Gln	Arg	Pro	Gly	Arg	Ile	Pro	Thr	Ser					
625						630			635			640								
agc	cga	tgt	ggg	aat	acc	atc	ccc	gat	gat	gac	aac	cag	gtg	gtg	tca	2085				
Ser	Arg	Cys	Gly	Asn	Thr	Ile	Pro	Asp	Asp	Asp	Asn	Gln	Val	Val	Ser					
			645						650			655								
tta	tca	cca	ggc	tca	aga	tat	gtc	gtc	ctt	cct	cgg	ccg	gtg	tgc	ttt	2133				
Leu	Ser	Pro	Gly	Ser	Arg	Tyr	Val	Val	Leu	Pro	Arg	Pro	Val	Cys	Phe					
			660						665			670								

gag aag gga aca aac tac acg gtg agg ttg gag ctg cct cag tac acc	2181
Glu Lys Gly Thr Asn Tyr Thr Val Arg Leu Glu Leu Pro Gln Tyr Thr	
675 680 685	
tcc tct gat agc gac gtg gag agc ccc tac acg ctg atc gat tct ctt	2229
Ser Ser Asp Ser Asp Val Glu Ser Pro Tyr Thr Leu Ile Asp Ser Leu	
690 695 700	
gtt ctc atg cca tac tgt aaa tca ctg gac atc ttc acc gtg gga ggt	2277
Val Leu Met Pro Tyr Cys Lys Ser Leu Asp Ile Phe Thr Val Gly Gly	
705 710 715 720	
tca gga gat ggg gtg gtc acc aac agt gcc tgg gaa acc ttt cag aga	2325
Ser Gly Asp Gly Val Val Thr Asn Ser Ala Trp Glu Thr Phe Gln Arg	
725 730 735	
tac cga tgt cta gag aac agc aga agc gtt gtg aaa aca ccg atg aca	2373
Tyr Arg Cys Leu Glu Asn Ser Arg Ser Val Val Lys Thr Pro Met Thr	
740 745 750	
gat gtt tgc aga aac atc atc ttt agc att tct gcc ctg tta cac cag	2421
Asp Val Cys Arg Asn Ile Ile Phe Ser Ile Ser Ala Leu Leu His Gln	
755 760 765	
aca ggc ctg gct tgt gaa tgc gac cct cag ggt tgc tta agt tcc gtg	2469
Thr Gly Leu Ala Cys Glu Cys Asp Pro Gln Gly Ser Leu Ser Ser Val	
770 775 780	
tgt gat ccc aac gga ggc cag tgc cag tgc cgg ccc aac gtg gtt gga	2517
Cys Asp Pro Asn Gly Gly Gln Cys Gln Cys Arg Pro Asn Val Val Gly	
785 790 795 800	
aga acc tgc aac aga tgt gca cct gga act ttt ggc ttt ggc ccc agt	2565
Arg Thr Cys Asn Arg Cys Ala Pro Gly Thr Phe Gly Phe Gly Pro Ser	
805 810 815	
gga tgc aaa cct tgt gag tgc cat ctg caa gga tct gtc aat gcc ttc	2613
Gly Cys Lys Pro Cys Glu Cys His Leu Gln Gly Ser Val Asn Ala Phe	
820 825 830	
tgc aat ccc gtc act ggc cag tgc cac tgt ttc cag gga gtg tat gct	2661
Cys Asn Pro Val Thr Gly Gln Cys His Cys Phe Gln Gly Val Tyr Ala	
835 840 845	
cgg cag tgt gat cgg tgc tta cct ggg cac tgg ggc ttt cca agt tgc	2709
Arg Gln Cys Asp Arg Cys Leu Pro Gly His Trp Gly Phe Pro Ser Cys	
850 855 860	
cag ccc tgc cag tgc aat ggc cac gcc gat gac tgc gac cca gtg act	2757
Gln Pro Cys Gln Cys Asn Gly His Ala Asp Asp Cys Asp Pro Val Thr	
865 870 875 880	
ggg gag tgc ttg aac tgc cag gac tac acc atg ggt cat aac tgt gaa	2805
Gly Glu Cys Leu Asn Cys Gln Asp Tyr Thr Met Gly His Asn Cys Glu	
885 890 895	
agg tgc ttg gct ggt tac tat ggc gac ccc atc att ggg tca ggt gat	2853
Arg Cys Leu Ala Gly Tyr Tyr Gly Asp Pro Ile Ile Gly Ser Gly Asp	
900 905 910	

cac tgc cgc cct tgc cct tgc cca gat ggt ccc gac agt gga cgc cag His Cys Arg Pro Cys Pro Cys Pro Asp Gly Pro Asp Ser Gly Arg Gln 915 920 925	2901
ttt gcc agg agc tgc tac caa gat cct gtt act tta cag ctt gcc tgt Phe Ala Arg Ser Cys Tyr Gln Asp Pro Val Thr Leu Gln Leu Ala Cys 930 935 940	2949
gtt tgt gat cct gga tac att ggt tcc aga tgt gac gac tgt gcc tca Val Cys Asp Pro Gly Tyr Ile Gly Ser Arg Cys Asp Asp Cys Ala Ser 945 950 955 960	2997
gga tac ttt ggc aat cca tca gaa gtt ggg ggg tcg tgt cag cct tgc Gly Tyr Phe Gly Asn Pro Ser Glu Val Gly Gly Ser Cys Gln Pro Cys 965 970 975	3045
cag tgt cac aac aac att gac acg aca gac cca gaa gcc tgt gac aag Gln Cys His Asn Asn Ile Asp Thr Asp Pro Glu Ala Cys Asp Lys 980 985 990	3093
gag act ggg agg tgt ctc aag tgc ctg tac cac acg gaa ggg gaa cac Glu Thr Gly Arg Cys Leu Lys Cys Leu Tyr His Thr Glu Gly Glu His 995 1000 1005	3141
tgt cag ttc tgc cgg ttt gga tac tat ggt gat gcc ctc cgg cag gac Cys Gln Phe Cys Arg Phe Gly Tyr Tyr Gly Asp Ala Leu Arg Gln Asp 1010 1015 1020	3189
tgt cga aag tgt gtc tgt aat tac ctg ggc acc gtg caa gag cac tgt Cys Arg Lys Cys Val Cys Asn Tyr Leu Gly Thr Val Gln Glu His Cys 1025 1030 1035 1040	3237
aac ggc tct gac tgc cag tgc gac aaa gcc act ggt cag tgc ttg tgt Asn Gly Ser Asp Cys Gln Cys Asp Lys Ala Thr Gly Gln Cys Leu Cys 1045 1050 1055	3285
ctt cct aat gtg atc ggg cag aac tgt gac cgc tgt gcg ccc aat acc Leu Pro Asn Val Ile Gly Gln Asn Cys Asp Arg Cys Ala Pro Asn Thr 1060 1065 1070	3333
tgg cag ctg gcc agt ggc act ggc tgt gac cca tgc aac tgc aat gct Trp Gln Leu Ala Ser Gly Thr Gly Cys Asp Pro Cys Asn Cys Asn Ala 1075 1080 1085	3381
gct cat tcc ttc ggg cca tct tgc aat gag ttc acg ggg cag tgc cag Ala His Ser Phe Gly Pro Ser Cys Asn Glu Phe Thr Gly Gln Cys Gln 1090 1095 1100	3429
tgc atg cct ggg ttt gga ggc cgc acc tgc agc gag tgc cag gaa ctc Cys Met Pro Gly Phe Gly Gly Arg Thr Cys Ser Glu Cys Gln Glu Leu 1105 1110 1115 1120	3477
ttc tgg gga gac ccc gac gtg gag tgc cga gcc tgt gac tgt gac ccc Phe Trp Gly Asp Pro Asp Val Glu Cys Arg Ala Cys Asp Cys Asp Pro 1125 1130 1135	3525
agg ggc att gag acg cca cag tgt gac cag tcc acg ggc cag tgt gtc Arg Gly Ile Glu Thr Pro Gln Cys Asp Gln Ser Thr Gly Gln Cys Val 1140 1145 1150	3573
tgc gtt gag ggt gtt gag ggt cca cgc tgt gac aag tgc acg cga ggg	3621

Cys Val Glu Gly Val Glu Gly Pro Arg Cys Asp Lys Cys Thr Arg Gly	
1155	1160 1165
tac tcg ggg gtc ttc cct gac tgc aca ccc tgc cac cag tgc ttt gct	3669
Tyr Ser Gly Val Phe Pro Asp Cys Thr Pro Cys His Gln Cys Phe Ala	
1170	1175 1180
ctc tgg gat gtg atc att gcc gag ctg acc aac agg aca cac aga ttc	3717
Leu Trp Asp Val Ile Ile Ala Glu Leu Thr Asn Arg Thr His Arg Phe	
1185	1190 1195 1200
ctg gag aaa gcc aag gcc ttg aag atc agt ggt gtg atc ggg cct tac	3765
Leu Glu Lys Ala Lys Ala Leu Lys Ile Ser Gly Val Ile Gly Pro Tyr	
	1205 1210 1215
cgt gag act gtg gac tcg gtg gag agg aaa gtc agc gag ata aaa gac	3813
Arg Glu Thr Val Asp Ser Val Glu Arg Lys Val Ser Glu Ile Lys Asp	
	1220 1225 1230
atc ctg gcg cag agc ccc gca gca gag cca ctg aaa aac att ggg aat	3861
Ile Leu Ala Gln Ser Pro Ala Ala Glu Pro Leu Lys Asn Ile Gly Asn	
	1235 1240 1245
ctc ttt gag gaa gca gag aaa ctg att aaa gat gtt aca gaa atg atg	3909
Leu Phe Glu Glu Ala Glu Lys Leu Ile Lys Asp Val Thr Glu Met Met	
	1250 1255 1260
gct caa gta gaa gtg aaa tta tct gac aca act tcc caa agc aac agc	3957
Ala Gln Val Glu Val Lys Leu Ser Asp Thr Thr Ser Gln Ser Asn Ser	
	1265 1270 1275 1280
aca gcc aaa gaa ctg gat tct cta cag aca gaa gcc gaa agc cta gac	4005
Thr Ala Lys Glu Leu Asp Ser Leu Gln Thr Glu Ala Glu Ser Leu Asp	
	1285 1290 1295
aac act gtg aaa gaa ctt gct gaa caa ctg gaa ttt atc aaa aac tca	4053
Asn Thr Val Lys Glu Leu Ala Glu Gln Leu Glu Phe Ile Lys Asn Ser	
	1300 1305 1310
gat att cgg ggt gcc ttg gat agc att acc aag tat ttc cag atg tct	4101
Asp Ile Arg Gly Ala Leu Asp Ser Ile Thr Lys Tyr Phe Gln Met Ser	
	1315 1320 1325
ctt gag gca gag gag agg gtg aat gcc tcc acc aca gaa ccc aac agc	4149
Leu Glu Ala Glu Glu Arg Val Asn Ala Ser Thr Thr Glu Pro Asn Ser	
	1330 1335 1340
act gtg gag cag tca gcc ctc atg aga gac aga gta gaa gac gtg atg	4197
Thr Val Glu Gln Ser Ala Leu Met Arg Asp Arg Val Glu Asp Val Met	
	1345 1350 1355 1360
atg gag cga gaa tcc cag ttc aag gaa aaa caa gag gag cag gct cgc	4245
Met Glu Arg Glu Ser Gln Phe Lys Glu Lys Gln Glu Glu Gln Ala Arg	
	1365 1370 1375
ctc ctt gat gaa ctg gca ggc aag cta caa agc cta gac ctt tca gcc	4293
Leu Leu Asp Glu Leu Ala Gly Lys Leu Gln Ser Leu Asp Leu Ser Ala	
	1380 1385 1390
gct gcc gaa atg acc tgt gga aca ccc cca ggg gcc tcc tgt tcc gag	4341
Ala Ala Glu Met Thr Cys Gly Thr Pro Pro Gly Ala Ser Cys Ser Glu	

1395	1400	1405	
act gaa tgt ggc ggg cca aac tgc aga act gac gaa gga gag agg aag			4389
Thr Glu Cys Gly Gly Pro Asn Cys Arg Thr Asp Glu Gly Glu Arg Lys			
1410	1415	1420	
tgt ggg ggg cct ggc tgt ggt ggt ctg gtt act gtt gca cac aac gcc			4437
Cys Gly Gly Pro Gly Cys Gly Gly Leu Val Thr Val Ala His Asn Ala			
1425	1430	1435	1440
tgg cag aaa gcc atg gac ttg gac caa gat gtc ctg agt gcc ctg gct			4485
Trp Gln Lys Ala Met Asp Leu Asp Gln Asp Val Leu Ser Ala Leu Ala			
1445	1450	1455	
gaa gtg gaa cag ctc tcc aag atg gtc tct gaa gca aaa ctg agg gca			4533
Glu Val Glu Gln Leu Ser Lys Met Val Ser Glu Ala Lys Leu Arg Ala			
1460	1465	1470	
gat gag gca aaa caa agt gct gaa gac att ctg ttg aag aca aat gct			4581
Asp Glu Ala Lys Gln Ser Ala Glu Asp Ile Leu Leu Lys Thr Asn Ala			
1475	1480	1485	
acc aaa gaa aaa atg gac aag agc aat gag gag ctg aga aat cta atc			4629
Thr Lys Glu Lys Met Asp Lys Ser Asn Glu Glu Leu Arg Asn Leu Ile			
1490	1495	1500	
aag caa atc aga aac ttt ttg acc cag gat agt gct gat ttg gac agc			4677
Lys Gln Ile Arg Asn Phe Leu Thr Gln Asp Ser Ala Asp Leu Asp Ser			
1505	1510	1515	1520
att gaa gca gtt gct aat gaa gta ttg aaa atg gag atg cct agc acc			4725
Ile Glu Ala Val Ala Asn Glu Val Leu Lys Met Glu Met Pro Ser Thr			
1525	1530	1535	
cca cag cag tta cag aac ttg aca gaa gat ata cgt gaa cga gtt gaa			4773
Pro Gln Gln Leu Gln Asn Leu Thr Glu Asp Ile Arg Glu Arg Val Glu			
1540	1545	1550	
agc ctt tct caa gta gag gtt att ctt cag cat agt gct gct gac att			4821
Ser Leu Ser Gln Val Glu Val Ile Leu Gln His Ser Ala Ala Asp Ile			
1555	1560	1565	
gcc aga gct gag atg ttg tta gaa gaa gct aaa aga gca agc aaa agt			4869
Ala Arg Ala Glu Met Leu Leu Glu Glu Ala Lys Arg Ala Ser Lys Ser			
1570	1575	1580	
gca aca gat gtt aaa gtc act gca gat atg gta aag gaa gct ctg gaa			4917
Ala Thr Asp Val Lys Val Thr Ala Asp Met Val Lys Glu Ala Leu Glu			
1585	1590	1595	1600
gaa gca gaa aag gcc cag gtc gca gca gag aag gca att aaa caa gca			4965
Glu Ala Glu Lys Ala Gln Val Ala Ala Glu Lys Ala Ile Lys Gln Ala			
1605	1610	1615	
gat gaa gac att caa gga acc cag aac ctg tta act tcg att gag tct			5013
Asp Glu Asp Ile Gln Gly Thr Gln Asn Leu Leu Thr Ser Ile Glu Ser			
1620	1625	1630	
gaa aca gca gct tct gag gaa acc ttg ttc aac gcg tcc cag cgc atc			5061
Glu Thr Ala Ala Ser Glu Glu Thr Leu Phe Asn Ala Ser Gln Arg Ile			
1635	1640	1645	

```

agc gag tta gag agg aat gtg gaa gaa ctt aag cgg aaa gct gcc caa 5109
Ser Glu Leu Glu Arg Asn Val Glu Glu Leu Lys Arg Lys Ala Ala Gln
1650 1655 1660

aac tcc ggg gag gca gaa tat att gaa aaa gta gta tat act gtg aag 5157
Asn Ser Gly Glu Ala Glu Tyr Ile Glu Lys Val Val Tyr Thr Val Lys
1665 1670 1675 1680

caa agt gca gaa gat gtt aag aag act tta gat ggt gaa ctt gat gaa 5205
Gln Ser Ala Glu Asp Val Lys Lys Thr Leu Asp Gly Glu Leu Asp Glu
1685 1690 1695

aag tat aaa aaa gta gaa aat tta att gcc aaa aaa act gaa gag tca 5253
Lys Tyr Lys Lys Val Glu Asn Leu Ile Ala Lys Lys Thr Glu Glu Ser
1700 1705 1710

gct gat gcc aga agg aaa gcc gaa atg cta caa aat gaa gca aaa act 5301
Ala Asp Ala Arg Arg Lys Ala Glu Met Leu Gln Asn Glu Ala Lys Thr
1715 1720 1725

ctt tta gct caa gca aat agc aag ctg caa ctg ctc aaa gat tta gaa 5349
Leu Leu Ala Gln Ala Asn Ser Lys Leu Gln Leu Leu Lys Asp Leu Glu
1730 1735 1740

aga aaa tat gaa gac aat caa aga tac tta gaa gat aaa gct caa gaa 5397
Arg Lys Tyr Glu Asp Asn Gln Arg Tyr Leu Glu Asp Lys Ala Gln Glu
1745 1750 1755 1760

tta gca aga ctg gaa gga gaa gtc cgt tca ctc cta aag gat ata agc 5445
Leu Ala Arg Leu Glu Gly Glu Val Arg Ser Leu Leu Lys Asp Ile Ser
1765 1770 1775

cag aaa gtt gct gtg tat agc aca tgc ttg taacagagga gaataaaaaa 5495
Gln Lys Val Ala Val Tyr Ser Thr Cys Leu
1780 1785

tggctgaggt gaacaaggta aaacaactac attttaaaaa ctgacttaat gctcttcaaa 5555

ataaaacatc acctatttaa tgtttttaat cacattttgt atgagttaaa taaagccc 5613

<210> 6
<211> 1786
<212> PRT
<213> Homo sapiens

<400> 6
Met Gly Leu Leu Gln Leu Leu Ala Phe Ser Phe Leu Ala Leu Cys Arg
1 5 10 15

Ala Arg Val Arg Ala Gln Glu Pro Glu Phe Ser Tyr Gly Cys Ala Glu
20 25 30

Gly Ser Cys Tyr Pro Ala Thr Gly Asp Leu Leu Ile Gly Arg Ala Gln
35 40 45

Lys Leu Ser Val Thr Ser Thr Cys Gly Leu His Lys Pro Glu Pro Tyr
50 55 60

Cys Ile Val Ser His Leu Gln Glu Asp Lys Lys Cys Phe Ile Cys Asn

```

65	70	75	80
Ser Gln Asp Pro Tyr His Glu Thr Leu Asn Pro Asp Ser His Leu Ile	85	90	95
Glu Asn Val Val Thr Thr Phe Ala Pro Asn Arg Leu Lys Ile Trp Trp	100	105	110
Gln Ser Glu Asn Gly Val Glu Asn Val Thr Ile Gln Leu Asp Leu Glu	115	120	125
Ala Glu Phe His Phe Thr His Leu Ile Met Thr Phe Lys Thr Phe Arg	130	135	140
Pro Ala Ala Met Leu Ile Glu Arg Ser Ser Asp Phe Gly Lys Thr Trp	145	150	155
Gly Val Tyr Arg Tyr Phe Ala Tyr Asp Cys Glu Ala Ser Phe Pro Gly	165	170	175
Ile Ser Thr Gly Pro Met Lys Lys Val Asp Asp Ile Ile Cys Asp Ser	180	185	190
Arg Tyr Ser Asp Ile Glu Pro Ser Thr Glu Gly Glu Val Ile Phe Arg	195	200	205
Ala Leu Asp Pro Ala Phe Lys Ile Glu Asp Pro Tyr Ser Pro Arg Ile	210	215	220
Gln Asn Leu Leu Lys Ile Thr Asn Leu Arg Ile Lys Phe Val Lys Leu	225	230	235
His Thr Leu Gly Asp Asn Leu Leu Asp Ser Arg Met Glu Ile Arg Glu	245	250	255
Lys Tyr Tyr Tyr Ala Val Tyr Asp Met Val Val Arg Gly Asn Cys Phe	260	265	270
Cys Tyr Gly His Ala Ser Glu Cys Ala Pro Val Asp Gly Phe Asn Glu	275	280	285
Glu Val Glu Gly Met Val His Gly His Cys Met Cys Arg His Asn Thr	290	295	300
Lys Gly Leu Asn Cys Glu Leu Cys Met Asp Phe Tyr His Asp Leu Pro	305	310	315
Trp Arg Pro Ala Glu Gly Arg Asn Ser Asn Ala Cys Lys Lys Cys Asn	325	330	335
Cys Asn Glu His Ser Ile Ser Cys His Phe Asp Met Ala Val Tyr Leu	340	345	350
Ala Thr Gly Asn Val Ser Gly Gly Val Cys Asp Asp Cys Gln His Asn	355	360	365
Thr Met Gly Arg Asn Cys Glu Gln Cys Lys Pro Phe Tyr Tyr Gln His	370	375	380
Pro Glu Arg Asp Ile Arg Asp Pro Asn Phe Cys Glu Arg Cys Thr Cys	385	390	395
			400

Asp	Pro	Ala	Gly	Ser	Gln	Asn	Glu	Gly	Ile	Cys	Asp	Ser	Tyr	Thr	Asp		
				405					410						415		
Phe	Ser	Thr	Gly	Leu	Ile	Ala	Gly	Gln	Cys	Arg	Cys	Lys	Leu	Asn	Val		
			420					425						430			
Glu	Gly	Glu	His	Cys	Asp	Val	Cys	Lys	Glu	Gly	Phe	Tyr	Asp	Leu	Ser		
		435					440					445					
Ser	Glu	Asp	Pro	Phe	Gly	Cys	Lys	Ser	Cys	Ala	Cys	Asn	Pro	Leu	Gly		
	450					455						460					
Thr	Ile	Pro	Gly	Gly	Asn	Pro	Cys	Asp	Ser	Glu	Thr	Gly	His	Cys	Tyr		
465					470					475					480		
Cys	Lys	Arg	Leu	Val	Thr	Gly	Gln	His	Cys	Asp	Gln	Cys	Leu	Pro	Glu		
			485					490							495		
His	Trp	Gly	Leu	Ser	Asn	Asp	Leu	Asp	Gly	Cys	Arg	Pro	Cys	Asp	Cys		
			500					505						510			
Asp	Leu	Gly	Gly	Ala	Leu	Asn	Asn	Ser	Cys	Phe	Ala	Glu	Ser	Gly	Gln		
		515					520					525					
Cys	Ser	Cys	Arg	Pro	His	Met	Ile	Gly	Arg	Gln	Cys	Asn	Glu	Val	Glu		
	530					535					540						
Pro	Gly	Tyr	Tyr	Phe	Ala	Thr	Leu	Asp	His	Tyr	Leu	Tyr	Glu	Ala	Glu		
545					550					555					560		
Glu	Ala	Asn	Leu	Gly	Pro	Gly	Val	Ser	Ile	Val	Glu	Arg	Gln	Tyr	Ile		
			565						570					575			
Gln	Asp	Arg	Ile	Pro	Ser	Trp	Thr	Gly	Ala	Gly	Phe	Val	Arg	Val	Pro		
			580					585					590				
Glu	Gly	Ala	Tyr	Leu	Glu	Phe	Phe	Ile	Asp	Asn	Ile	Pro	Tyr	Ser	Met		
		595				600						605					
Glu	Tyr	Asp	Ile	Leu	Ile	Arg	Tyr	Glu	Pro	Gln	Leu	Pro	Asp	His	Trp		
	610					615					620						
Glu	Lys	Ala	Val	Ile	Thr	Val	Gln	Arg	Pro	Gly	Arg	Ile	Pro	Thr	Ser		
625					630					635					640		
Ser	Arg	Cys	Gly	Asn	Thr	Ile	Pro	Asp	Asp	Asn	Gln	Val	Val	Ser			
			645						650				655				
Leu	Ser	Pro	Gly	Ser	Arg	Tyr	Val	Val	Leu	Pro	Arg	Pro	Val	Cys	Phe		
			660					665					670				
Glu	Lys	Gly	Thr	Asn	Tyr	Thr	Val	Arg	Leu	Glu	Leu	Pro	Gln	Tyr	Thr		
		675					680					685					
Ser	Ser	Asp	Ser	Asp	Val	Glu	Ser	Pro	Tyr	Thr	Leu	Ile	Asp	Ser	Leu		
	690					695					700						
Val	Leu	Met	Pro	Tyr	Cys	Lys	Ser	Leu	Asp	Ile	Phe	Thr	Val	Gly	Gly		
705					710					715					720		



Ser Gly Asp Gly Val Val Thr Asn Ser Ala Trp Glu Thr Phe Gln Arg  
725 730 735

Tyr Arg Cys Leu Glu Asn Ser Arg Ser Val Val Lys Thr Pro Met Thr  
740 745 750

Asp Val Cys Arg Asn Ile Ile Phe Ser Ile Ser Ala Leu Leu His Gln  
755 760 765

Thr Gly Leu Ala Cys Glu Cys Asp Pro Gln Gly Ser Leu Ser Ser Val  
770 775 780

Cys Asp Pro Asn Gly Gly Gln Cys Gln Cys Arg Pro Asn Val Val Gly  
785 790 795 800

Arg Thr Cys Asn Arg Cys Ala Pro Gly Thr Phe Gly Phe Gly Pro Ser  
805 810 815

Gly Cys Lys Pro Cys Glu Cys His Leu Gln Gly Ser Val Asn Ala Phe  
820 825 830

Cys Asn Pro Val Thr Gly Gln Cys His Cys Phe Gln Gly Val Tyr Ala  
835 840 845

Arg Gln Cys Asp Arg Cys Leu Pro Gly His Trp Gly Phe Pro Ser Cys  
850 855 860

Gln Pro Cys Gln Cys Asn Gly His Ala Asp Asp Cys Asp Pro Val Thr  
865 870 875 880

Gly Glu Cys Leu Asn Cys Gln Asp Tyr Thr Met Gly His Asn Cys Glu  
885 890 895

Arg Cys Leu Ala Gly Tyr Tyr Gly Asp Pro Ile Ile Gly Ser Gly Asp  
900 905 910

His Cys Arg Pro Cys Pro Cys Pro Asp Gly Pro Asp Ser Gly Arg Gln  
915 920 925

Phe Ala Arg Ser Cys Tyr Gln Asp Pro Val Thr Leu Gln Leu Ala Cys  
930 935 940

Val Cys Asp Pro Gly Tyr Ile Gly Ser Arg Cys Asp Asp Cys Ala Ser  
945 950 955 960

Gly Tyr Phe Gly Asn Pro Ser Glu Val Gly Gly Ser Cys Gln Pro Cys  
965 970 975

Gln Cys His Asn Asn Ile Asp Thr Thr Asp Pro Glu Ala Cys Asp Lys  
980 985 990

Glu Thr Gly Arg Cys Leu Lys Cys Leu Tyr His Thr Glu Gly Glu His  
995 1000 1005

Cys Gln Phe Cys Arg Phe Gly Tyr Tyr Gly Asp Ala Leu Arg Gln Asp  
1010 1015 1020

Cys Arg Lys Cys Val Cys Asn Tyr Leu Gly Thr Val Gln Glu His Cys  
1025 1030 1035 1040

Asn Gly Ser Asp Cys Gln Cys Asp Lys Ala Thr Gly Gln Cys Leu Cys

1045	1050	1055
Leu Pro Asn Val Ile Gly Gln Asn Cys Asp Arg Cys Ala Pro Asn Thr 1060	1065	1070
Trp Gln Leu Ala Ser Gly Thr Gly Cys Asp Pro Cys Asn Cys Asn Ala 1075	1080	1085
Ala His Ser Phe Gly Pro Ser Cys Asn Glu Phe Thr Gly Gln Cys Gln 1090	1095	1100
Cys Met Pro Gly Phe Gly Gly Arg Thr Cys Ser Glu Cys Gln Glu Leu 1105	1110	1115
Phe Trp Gly Asp Pro Asp Val Glu Cys Arg Ala Cys Asp Cys Asp Pro 1125	1130	1135
Arg Gly Ile Glu Thr Pro Gln Cys Asp Gln Ser Thr Gly Gln Cys Val 1140	1145	1150
Cys Val Glu Gly Val Glu Gly Pro Arg Cys Asp Lys Cys Thr Arg Gly 1155	1160	1165
Tyr Ser Gly Val Phe Pro Asp Cys Thr Pro Cys His Gln Cys Phe Ala 1170	1175	1180
Leu Trp Asp Val Ile Ile Ala Glu Leu Thr Asn Arg Thr His Arg Phe 1185	1190	1195
Leu Glu Lys Ala Lys Ala Leu Lys Ile Ser Gly Val Ile Gly Pro Tyr 1205	1210	1215
Arg Glu Thr Val Asp Ser Val Glu Arg Lys Val Ser Glu Ile Lys Asp 1220	1225	1230
Ile Leu Ala Gln Ser Pro Ala Ala Glu Pro Leu Lys Asn Ile Gly Asn 1235	1240	1245
Leu Phe Glu Glu Ala Glu Lys Leu Ile Lys Asp Val Thr Glu Met Met 1250	1255	1260
Ala Gln Val Glu Val Lys Leu Ser Asp Thr Thr Ser Gln Ser Asn Ser 1265	1270	1275
Thr Ala Lys Glu Leu Asp Ser Leu Gln Thr Glu Ala Glu Ser Leu Asp 1285	1290	1295
Asn Thr Val Lys Glu Leu Ala Glu Gln Leu Glu Phe Ile Lys Asn Ser 1300	1305	1310
Asp Ile Arg Gly Ala Leu Asp Ser Ile Thr Lys Tyr Phe Gln Met Ser 1315	1320	1325
Leu Glu Ala Glu Glu Arg Val Asn Ala Ser Thr Thr Glu Pro Asn Ser 1330	1335	1340
Thr Val Glu Gln Ser Ala Leu Met Arg Asp Arg Val Glu Asp Val Met 1345	1350	1355
Met Glu Arg Glu Ser Gln Phe Lys Glu Lys Gln Glu Glu Gln Ala Arg 1365	1370	1375

Leu Leu Asp Glu Leu Ala Gly Lys Leu Gln Ser Leu Asp Leu Ser Ala  
 1380 1385 1390  
 Ala Ala Glu Met Thr Cys Gly Thr Pro Pro Gly Ala Ser Cys Ser Glu  
 1395 1400 1405  
 Thr Glu Cys Gly Gly Pro Asn Cys Arg Thr Asp Glu Gly Glu Arg Lys  
 1410 1415 1420  
 Cys Gly Gly Pro Gly Cys Gly Gly Leu Val Thr Val Ala His Asn Ala  
 1425 1430 1435 1440  
 Trp Gln Lys Ala Met Asp Leu Asp Gln Asp Val Leu Ser Ala Leu Ala  
 1445 1450 1455  
 Glu Val Glu Gln Leu Ser Lys Met Val Ser Glu Ala Lys Leu Arg Ala  
 1460 1465 1470  
 Asp Glu Ala Lys Gln Ser Ala Glu Asp Ile Leu Leu Lys Thr Asn Ala  
 1475 1480 1485  
 Thr Lys Glu Lys Met Asp Lys Ser Asn Glu Glu Leu Arg Asn Leu Ile  
 1490 1495 1500  
 Lys Gln Ile Arg Asn Phe Leu Thr Gln Asp Ser Ala Asp Leu Asp Ser  
 1505 1510 1515 1520  
 Ile Glu Ala Val Ala Asn Glu Val Leu Lys Met Glu Met Pro Ser Thr  
 1525 1530 1535  
 Pro Gln Gln Leu Gln Asn Leu Thr Glu Asp Ile Arg Glu Arg Val Glu  
 1540 1545 1550  
 Ser Leu Ser Gln Val Glu Val Ile Leu Gln His Ser Ala Ala Asp Ile  
 1555 1560 1565  
 Ala Arg Ala Glu Met Leu Leu Glu Glu Ala Lys Arg Ala Ser Lys Ser  
 1570 1575 1580  
 Ala Thr Asp Val Lys Val Thr Ala Asp Met Val Lys Glu Ala Leu Glu  
 1585 1590 1595 1600  
 Glu Ala Glu Lys Ala Gln Val Ala Ala Glu Lys Ala Ile Lys Gln Ala  
 1605 1610 1615  
 Asp Glu Asp Ile Gln Gly Thr Gln Asn Leu Leu Thr Ser Ile Glu Ser  
 1620 1625 1630  
 Glu Thr Ala Ala Ser Glu Glu Thr Leu Phe Asn Ala Ser Gln Arg Ile  
 1635 1640 1645  
 Ser Glu Leu Glu Arg Asn Val Glu Glu Leu Lys Arg Lys Ala Ala Gln  
 1650 1655 1660  
 Asn Ser Gly Glu Ala Glu Tyr Ile Glu Lys Val Val Tyr Thr Val Lys  
 1665 1670 1675 1680  
 Gln Ser Ala Glu Asp Val Lys Lys Thr Leu Asp Gly Glu Leu Asp Glu  
 1685 1690 1695

Lys Tyr Lys Lys Val Glu Asn Leu Ile Ala Lys Lys Thr Glu Glu Ser  
 1700 1705 1710

Ala Asp Ala Arg Arg Lys Ala Glu Met Leu Gln Asn Glu Ala Lys Thr  
 1715 1720 1725

Leu Leu Ala Gln Ala Asn Ser Lys Leu Gln Leu Leu Lys Asp Leu Glu  
 1730 1735 1740

Arg Lys Tyr Glu Asp Asn Gln Arg Tyr Leu Glu Asp Lys Ala Gln Glu  
 1745 1750 1755 1760

Leu Ala Arg Leu Glu Gly Glu Val Arg Ser Leu Leu Lys Asp Ile Ser  
 1765 1770 1775

Gln Lys Val Ala Val Tyr Ser Thr Cys Leu  
 1780 1785

<210> 7  
 <211> 5433  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(5295)

<400> 7  
 cag gaa ccc gag ttc agc tac ggc tgc gca gaa ggc agc tgc tat ccc 48  
 Gln Glu Pro Glu Phe Ser Tyr Gly Cys Ala Glu Gly Ser Cys Tyr Pro  
 1 5 10 15

gcc acg ggc gac ctt ctc atc ggc cga gca cag aag ctt tcg gtg acc 96  
 Ala Thr Gly Asp Leu Leu Ile Gly Arg Ala Gln Lys Leu Ser Val Thr  
 20 25 30

tcg acg tgc ggg ctg cac aag ccc gaa ccc tac tgt atc gtc agc cac 144  
 Ser Thr Cys Gly Leu His Lys Pro Glu Pro Tyr Cys Ile Val Ser His  
 35 40 45

ttg cag gag gac aaa aaa tgc ttc ata tgc aat tcc caa gat cct tat 192  
 Leu Gln Glu Asp Lys Lys Cys Phe Ile Cys Asn Ser Gln Asp Pro Tyr  
 50 55 60

cat gag acc ctg aat cct gac agc cat ctc att gaa aat gtg gtc act 240  
 His Glu Thr Leu Asn Pro Asp Ser His Leu Ile Glu Asn Val Val Thr  
 65 70 75 80

aca ttt gct cca aac cgc ctt aag att tgg tgg caa tct gaa aat ggt 288  
 Thr Phe Ala Pro Asn Arg Leu Lys Ile Trp Trp Gln Ser Glu Asn Gly  
 85 90 95

gtg gaa aat gta act atc caa ctg gat ttg gaa gca gaa ttc cat ttt 336  
 Val Glu Asn Val Thr Ile Gln Leu Asp Leu Glu Ala Glu Phe His Phe  
 100 105 110

act cat ctc ata atg act ttc aag aca ttc cgt cca gct gct atg ctg 384  
 Thr His Leu Ile Met Thr Phe Lys Thr Phe Arg Pro Ala Ala Met Leu  
 115 120 125

ata gaa cga tcg tcc gac ttt ggg aaa acc tgg ggt gtg tat aga tac	432
Ile Glu Arg Ser Ser Asp Phe Gly Lys Thr Trp Gly Val Tyr Arg Tyr	
130 135 140	
ttc gcc tat gac tgt gag gcc tcg ttt cca ggc att tca act ggc ccc	480
Phe Ala Tyr Asp Cys Glu Ala Ser Phe Pro Gly Ile Ser Thr Gly Pro	
145 150 155 160	
atg aaa aaa gtc gat gac ata att tgt gat tct cga tat tct gac att	528
Met Lys Lys Val Asp Asp Ile Ile Cys Asp Ser Arg Tyr Ser Asp Ile	
165 170 175	
gaa ccc tca act gaa gga gag gtg ata ttt cgt gct tta gat cct gct	576
Glu Pro Ser Thr Glu Gly Glu Val Ile Phe Arg Ala Leu Asp Pro Ala	
180 185 190	
ttc aaa ata gaa gat cct tat agc cca agg ata cag aat tta tta aaa	624
Phe Lys Ile Glu Asp Pro Tyr Ser Pro Arg Ile Gln Asn Leu Leu Lys	
195 200 205	
att acc aac ttg aga atc aag ttt gtg aaa ctg cat act ttg gga gat	672
Ile Thr Asn Leu Arg Ile Lys Phe Val Lys Leu His Thr Leu Gly Asp	
210 215 220	
aac ctt ctg gat tcc agg atg gaa atc aga gaa aag tat tat tat gca	720
Asn Leu Leu Asp Ser Arg Met Glu Ile Arg Glu Lys Tyr Tyr Tyr Ala	
225 230 235 240	
gtt tat gat atg gtg gtt cga gga aat tgc ttc tgc tat ggt cat gcc	768
Val Tyr Asp Met Val Val Arg Gly Asn Cys Phe Cys Tyr Gly His Ala	
245 250 255	
agc gaa tgt gcc cct gtg gat gga ttc aat gaa gaa gtg gaa gga atg	816
Ser Glu Cys Ala Pro Val Asp Gly Phe Asn Glu Glu Val Glu Gly Met	
260 265 270	
gtt cac gga cac tgc atg tgc agg cat aac acc aag ggc tta aac tgt	864
Val His Gly His Cys Met Cys Arg His Asn Thr Lys Gly Leu Asn Cys	
275 280 285	
gaa ctc tgc atg gat ttc tac cat gat tta cct tgg aga cct gct gaa	912
Glu Leu Cys Met Asp Phe Tyr His Asp Leu Pro Trp Arg Pro Ala Glu	
290 295 300	
ggc cga aac agc aac gcc tgt aaa aaa tgt aac tgc aat gaa cat tcc	960
Gly Arg Asn Ser Asn Ala Cys Lys Lys Cys Asn Cys Asn Glu His Ser	
305 310 315 320	
atc tct tgt cac ttt gac atg gct gtt tac ctg gcc acg ggg aac gtc	1008
Ile Ser Cys His Phe Asp Met Ala Val Tyr Leu Ala Thr Gly Asn Val	
325 330 335	
agc gga ggc gtg tgt gat gac tgt cag cac aac acc atg ggg cgc aac	1056
Ser Gly Gly Val Cys Asp Asp Cys Gln His Asn Thr Met Gly Arg Asn	
340 345 350	
tgt gag cag tgc aag ccg ttt tac tac cag cac cca gag agg gac atc	1104
Cys Glu Gln Cys Lys Pro Phe Tyr Tyr Gln His Pro Glu Arg Asp Ile	
355 360 365	
cga gat cct aat ttc tgt gaa cga tgt acg tgt gac cca gct ggc tct	1152

Arg Asp Pro Asn Phe Cys Glu Arg Cys Thr Cys Asp Pro Ala Gly Ser	
370 375 380	
caa aat gag gga att tgt gac agc tat act gat ttt tct act ggt ctc	1200
Gln Asn Glu Gly Ile Cys Asp Ser Tyr Thr Asp Phe Ser Thr Gly Leu	
385 390 395 400	
att gct ggc cag tgt cgg tgt aaa tta aat gtg gaa gga gaa cat tgt	1248
Ile Ala Gly Gln Cys Arg Cys Lys Leu Asn Val Glu Gly Glu His Cys	
405 410 415	
gat gtt tgc aaa gaa ggc ttc tat gat tta agc agt gaa gat cca ttt	1296
Asp Val Cys Lys Glu Gly Phe Tyr Asp Leu Ser Ser Glu Asp Pro Phe	
420 425 430	
ggg tgt aaa tct tgt gct tgc aat cct ctg gga aca att cct gga ggg	1344
Gly Cys Lys Ser Cys Ala Cys Asn Pro Leu Gly Thr Ile Pro Gly Gly	
435 440 445	
aat cct tgt gat tcc gag aca ggt cac tgc tac tgc aag cgt ctg gtg	1392
Asn Pro Cys Asp Ser Glu Thr Gly His Cys Tyr Cys Lys Arg Leu Val	
450 455 460	
aca gga cag cat tgt gac cag tgc ctg cca gag cac tgg ggc tta agc	1440
Thr Gly Gln His Cys Asp Gln Cys Leu Pro Glu His Trp Gly Leu Ser	
465 470 475 480	
aat gat ttg gat gga tgt cga cca tgt gac tgt gac ctt ggg gga gcc	1488
Asn Asp Leu Asp Gly Cys Arg Pro Cys Asp Cys Asp Leu Gly Gly Ala	
485 490 495	
tta aac aac agt tgc ttt gcg gag tca ggc cag tgc tca tgc cgg cct	1536
Leu Asn Asn Ser Cys Phe Ala Glu Ser Gly Gln Cys Ser Cys Arg Pro	
500 505 510	
cac atg att gga cgt cag tgc aac gaa gtg gaa cct ggt tac tac ttt	1584
His Met Ile Gly Arg Gln Cys Asn Glu Val Glu Pro Gly Tyr Tyr Phe	
515 520 525	
gcc acc ctg gat cac tac ctc tat gaa gcg gag gaa gcc aac ttg ggg	1632
Ala Thr Leu Asp His Tyr Leu Tyr Glu Ala Glu Ala Asn Leu Gly	
530 535 540	
cct ggg gtt agc ata gtg gag cgg caa tat atc cag gac cgg att ccc	1680
Pro Gly Val Ser Ile Val Glu Arg Gln Tyr Ile Gln Asp Arg Ile Pro	
545 550 555 560	
tcc tgg act gga gcc ggc ttc gtc cga gtg cct gaa ggg gct tat ttg	1728
Ser Trp Thr Gly Ala Gly Phe Val Arg Val Pro Glu Gly Ala Tyr Leu	
565 570 575	
gag ttt ttc att gac aac ata cca tat tcc atg gag tac gac atc cta	1776
Glu Phe Phe Ile Asp Asn Ile Pro Tyr Ser Met Glu Tyr Asp Ile Leu	
580 585 590	
att cgc tac gag cca cag cta ccc gac cac tgg gaa aaa gct gtc atc	1824
Ile Arg Tyr Glu Pro Gln Leu Pro Asp His Trp Glu Lys Ala Val Ile	
595 600 605	
aca gtg cag cga cct gga agg att cca acc agc agc cga tgt ggt aat	1872
Thr Val Gln Arg Pro Gly Arg Ile Pro Thr Ser Ser Arg Cys Gly Asn	

610	615	620	
acc atc ccc gat gat gac aac cag gtg gtg tca tta tca cca ggc tca			1920
Thr Ile Pro Asp Asp Asp Asn Gln Val Val Ser Leu Ser Pro Gly Ser			
625	630	635	640
aga tat gtc gtc ctt cct cgg ccg gtg tgc ttt gag aag gga aca aac			1968
Arg Tyr Val Val Leu Pro Arg Pro Val Cys Phe Glu Lys Gly Thr Asn			
	645	650	655
tac acg gtg agg ttg gag ctg cct cag tac acc tcc tct gat agc gac			2016
Tyr Thr Val Arg Leu Glu Leu Pro Gln Tyr Thr Ser Ser Asp Ser Asp			
	660	665	670
gtg gag agc ccc tac acg ctg atc gat tct ctt gtt ctc atg cca tac			2064
Val Glu Ser Pro Tyr Thr Leu Ile Asp Ser Leu Val Leu Met Pro Tyr			
	675	680	685
tgt aaa tca ctg gac atc ttc acc gtg gga ggt tca gga gat ggg gtg			2112
Cys Lys Ser Leu Asp Ile Phe Thr Val Gly Gly Ser Gly Asp Gly Val			
	690	695	700
gtc acc aac agt gcc tgg gaa acc ttt cag aga tac cga tgt cta gag			2160
Val Thr Asn Ser Ala Trp Glu Thr Phe Gln Arg Tyr Arg Cys Leu Glu			
	705	710	715
aac agc aga agc gtt gtg aaa aca ccg atg aca gat gtt tgc aga aac			2208
Asn Ser Arg Ser Val Val Lys Thr Pro Met Thr Asp Val Cys Arg Asn			
	725	730	735
atc atc ttt agc att tct gcc ctg tta cac cag aca ggc ctg gct tgt			2256
Ile Ile Phe Ser Ile Ser Ala Leu Leu His Gln Thr Gly Leu Ala Cys			
	740	745	750
gaa tgc gac cct cag ggt tcg tta agt tcc gtg tgt gat ccc aac gga			2304
Glu Cys Asp Pro Gln Gly Ser Leu Ser Ser Val Cys Asp Pro Asn Gly			
	755	760	765
ggc cag tgc cag tgc cgg ccc aac gtg gtt gga aga acc tgc aac aga			2352
Gly Gln Cys Gln Cys Arg Pro Asn Val Val Gly Arg Thr Cys Asn Arg			
	770	775	780
tgt gca cct gga act ttt ggc ttt ggc ccc agt gga tgc aaa cct tgt			2400
Cys Ala Pro Gly Thr Phe Gly Phe Gly Pro Ser Gly Cys Lys Pro Cys			
	785	790	795
gag tgc cat ctg caa gga tct gtc aat gcc ttc tgc aat ccc gtc act			2448
Glu Cys His Leu Gln Gly Ser Val Asn Ala Phe Cys Asn Pro Val Thr			
	805	810	815
ggc cag tgc cac tgt ttc cag gga gtg tat gct cgg cag tgt gat cgg			2496
Gly Gln Cys His Cys Phe Gln Gly Val Tyr Ala Arg Gln Cys Asp Arg			
	820	825	830
tgc tta cct ggg cac tgg ggc ttt cca agt tgc cag ccc tgc cag tgc			2544
Cys Leu Pro Gly His Trp Gly Phe Pro Ser Cys Gln Pro Cys Gln Cys			
	835	840	845
aat ggc cac gcc gat gac tgc gac cca gtg act ggg gag tgc ttg aac			2592
Asn Gly His Ala Asp Asp Cys Asp Pro Val Thr Gly Glu Cys Leu Asn			
	850	855	860

tgc cag gac tac acc atg ggt cat aac tgt gaa agg tgc ttg gct ggt	2640
Cys Gln Asp Tyr Thr Met Gly His Asn Cys Glu Arg Cys Leu Ala Gly	
865 870 875 880	
tac tat ggc gac ccc atc att ggg tca ggt gat cac tgc cgc cct tgc	2688
Tyr Tyr Gly Asp Pro Ile Ile Gly Ser Gly Asp His Cys Arg Pro Cys	
885 890 895	
cct tgc cca gat ggt ccc gac agt gga cgc cag ttt gcc agg agc tgc	2736
Pro Cys Pro Asp Gly Pro Asp Ser Gly Arg Gln Phe Ala Arg Ser Cys	
900 905 910	
tac caa gat cct gtt act tta cag ctt gcc tgt gtt tgt gat cct gga	2784
Tyr Gln Asp Pro Val Thr Leu Gln Leu Ala Cys Val Cys Asp Pro Gly	
915 920 925	
tac att ggt tcc aga tgt gac gac tgt gcc tca gga tac ttt ggc aat	2832
Tyr Ile Gly Ser Arg Cys Asp Asp Cys Ala Ser Gly Tyr Phe Gly Asn	
930 935 940	
cca tca gaa gtt ggg ggg tgc tgt cag cct tgc cag tgt cac aac aac	2880
Pro Ser Glu Val Gly Gly Ser Cys Gln Pro Cys Gln Cys His Asn Asn	
945 950 955 960	
att gac acg aca gac cca gaa gcc tgt gac aag gag act ggg agg tgt	2928
Ile Asp Thr Thr Asp Pro Glu Ala Cys Asp Lys Glu Thr Gly Arg Cys	
965 970 975	
ctc aag tgc ctg tac cac acg gaa ggg gaa cac tgt cag ttc tgc cgg	2976
Leu Lys Cys Leu Tyr His Thr Glu Gly Glu His Cys Gln Phe Cys Arg	
980 985 990	
ttt gga tac tat ggt gat gcc ctc cgg cag gac tgt cga aag tgt gtc	3024
Phe Gly Tyr Tyr Gly Asp Ala Leu Arg Gln Asp Cys Arg Lys Cys Val	
995 1000 1005	
tgt aat tac ctg ggc acc gtg caa gag cac tgt aac ggc tct gac tgc	3072
Cys Asn Tyr Leu Gly Thr Val Gln Glu His Cys Asn Gly Ser Asp Cys	
1010 1015 1020	
cag tgc gac aaa gcc act ggt cag tgc ttg tgt ctt cct aat gtg atc	3120
Gln Cys Asp Lys Ala Thr Gly Gln Cys Leu Cys Leu Pro Asn Val Ile	
1025 1030 1035 1040	
ggg cag aac tgt gac cgc tgt gcg ccc aat acc tgg cag ctg gcc agt	3168
Gly Gln Asn Cys Asp Arg Cys Ala Pro Asn Thr Trp Gln Leu Ala Ser	
1045 1050 1055	
ggc act ggc tgt gac cca tgc aac tgc aat gct gct cat tcc ttc ggg	3216
Gly Thr Gly Cys Asp Pro Cys Asn Cys Asn Ala Ala His Ser Phe Gly	
1060 1065 1070	
cca tct tgc aat gag ttc acg ggg cag tgc cag tgc atg cct ggg ttt	3264
Pro Ser Cys Asn Glu Phe Thr Gly Gln Cys Gln Cys Met Pro Gly Phe	
1075 1080 1085	
gga ggc cgc acc tgc agc gag tgc cag gaa ctc ttc tgg gga gac ccc	3312
Gly Gly Arg Thr Cys Ser Glu Cys Gln Glu Leu Phe Trp Gly Asp Pro	
1090 1095 1100	



gac gtg gag tgc cga gcc tgt gac tgt gac ccc agg ggc att gag acg Asp Val Glu Cys Arg Ala Cys Asp Cys Asp Pro Arg Gly Ile Glu Thr 1105 1110 1115 1120	3360
cca cag tgt gac cag tcc acg ggc cag tgt gtc tgc gtt gag ggt gtt Pro Gln Cys Asp Gln Ser Thr Gly Gln Cys Val Cys Val Glu Gly Val 1125 1130 1135	3408
gag ggt cca cgc tgt gac aag tgc acg cga ggg tac tcg ggg gtc ttc Glu Gly Pro Arg Cys Asp Lys Cys Thr Arg Gly Tyr Ser Gly Val Phe 1140 1145 1150	3456
cct gac tgc aca ccc tgc cac cag tgc ttt gct ctc tgg gat gtg atc Pro Asp Cys Thr Pro Cys His Gln Cys Phe Ala Leu Trp Asp Val Ile 1155 1160 1165	3504
att gcc gag ctg acc aac agg aca cac aga ttc ctg gag aaa gcc aag Ile Ala Glu Leu Thr Asn Arg Thr His Arg Phe Leu Glu Lys Ala Lys 1170 1175 1180	3552
gcc ttg aag atc agt ggt gtg atc ggg cct tac cgt gag act gtg gac Ala Leu Lys Ile Ser Gly Val Ile Gly Pro Tyr Arg Glu Thr Val Asp 1185 1190 1195 1200	3600
tcg gtg gag agg aaa gtc agc gag ata aaa gac atc ctg gcg cag agc Ser Val Glu Arg Lys Val Ser Glu Ile Lys Asp Ile Leu Ala Gln Ser 1205 1210 1215	3648
ccc gca gca gag cca ctg aaa aac att ggg aat ctc ttt gag gaa gca Pro Ala Ala Glu Pro Leu Lys Asn Ile Gly Asn Leu Phe Glu Glu Ala 1220 1225 1230	3696
gag aaa ctg att aaa gat gtt aca gaa atg atg gct caa gta gaa gtg Glu Lys Leu Ile Lys Asp Val Thr Glu Met Met Ala Gln Val Glu Val 1235 1240 1245	3744
aaa tta tct gac aca act tcc caa agc aac agc aca gcc aaa gaa ctg Lys Leu Ser Asp Thr Thr Ser Gln Ser Asn Ser Thr Ala Lys Glu Leu 1250 1255 1260	3792
gat tct cta cag aca gaa gcc gaa agc cta gac aac act gtg aaa gaa Asp Ser Leu Gln Thr Glu Ala Glu Ser Leu Asp Asn Thr Val Lys Glu 1265 1270 1275 1280	3840
ctt gct gaa caa ctg gaa ttt atc aaa aac tca gat att cgg ggt gcc Leu Ala Glu Gln Leu Glu Phe Ile Lys Asn Ser Asp Ile Arg Gly Ala 1285 1290 1295	3888
ttg gat agc att acc aag tat ttc cag atg tct ctt gag gca gag gag Leu Asp Ser Ile Thr Lys Tyr Phe Gln Met Ser Leu Glu Ala Glu Glu 1300 1305 1310	3936
agg gtg aat gcc tcc acc aca gaa ccc aac agc act gtg gag cag tca Arg Val Asn Ala Ser Thr Thr Glu Pro Asn Ser Thr Val Glu Gln Ser 1315 1320 1325	3984
gcc ctc atg aga gac aga gta gaa gac gtg atg atg gag cga gaa tcc Ala Leu Met Arg Asp Arg Val Glu Asp Val Met Met Glu Arg Glu Ser 1330 1335 1340	4032
cag ttc aag gaa aaa caa gag gag cag gct cgc ctc ctt gat gaa ctg	4080

Gln Phe Lys Glu Lys Gln Glu Glu Gln Ala Arg Leu Leu Asp Glu Leu	
1345	1350 1355 1360
gca ggc aag cta caa agc cta gac ctt tca gcc gct gcc gaa atg acc	4128
Ala Gly Lys Leu Gln Ser Leu Asp Leu Ser Ala Ala Ala Glu Met Thr	
	1365 1370 1375
tgt gga aca ccc cca ggg gcc tcc tgt tcc gag act gaa tgt ggc ggg	4176
Cys Gly Thr Pro Pro Gly Ala Ser Cys Ser Glu Thr Glu Cys Gly Gly	
	1380 1385 1390
cca aac tgc aga act gac gaa gga gag agg aag tgt ggg ggg cct ggc	4224
Pro Asn Cys Arg Thr Asp Glu Gly Glu Arg Lys Cys Gly Gly Pro Gly	
	1395 1400 1405
tgt ggt ggt ctg gtt act gtt gca cac aac gcc tgg cag aaa gcc atg	4272
Cys Gly Gly Leu Val Thr Val Ala His Asn Ala Trp Gln Lys Ala Met	
	1410 1415 1420
gac ttg gac caa gat gtc ctg agt gcc ctg gct gaa gtg gaa cag ctc	4320
Asp Leu Asp Gln Asp Val Leu Ser Ala Leu Ala Glu Val Glu Gln Leu	
	1425 1430 1435 1440
tcc aag atg gtc tct gaa gca aaa ctg agg gca gat gag gca aaa caa	4368
Ser Lys Met Val Ser Glu Ala Lys Leu Arg Ala Asp Glu Ala Lys Gln	
	1445 1450 1455
agt gct gaa gac att ctg ttg aag aca aat gct acc aaa gaa aaa atg	4416
Ser Ala Glu Asp Ile Leu Leu Lys Thr Asn Ala Thr Lys Glu Lys Met	
	1460 1465 1470
gac aag agc aat gag gag ctg aga aat cta atc aag caa atc aga aac	4464
Asp Lys Ser Asn Glu Glu Leu Arg Asn Leu Ile Lys Gln Ile Arg Asn	
	1475 1480 1485
ttt ttg acc cag gat agt gct gat ttg gac agc att gaa gca gtt gct	4512
Phe Leu Thr Gln Asp Ser Ala Asp Leu Asp Ser Ile Glu Ala Val Ala	
	1490 1495 1500
aat gaa gta ttg aaa atg gag atg cct agc acc cca cag cag tta cag	4560
Asn Glu Val Leu Lys Met Glu Met Pro Ser Thr Pro Gln Gln Leu Gln	
	1505 1510 1515 1520
aac ttg aca gaa gat ata cgt gaa cga gtt gaa agc ctt tct caa gta	4608
Asn Leu Thr Glu Asp Ile Arg Glu Arg Val Glu Ser Leu Ser Gln Val	
	1525 1530 1535
gag gtt att ctt cag cat agt gct gct gac att gcc aga gct gag atg	4656
Glu Val Ile Leu Gln His Ser Ala Ala Asp Ile Ala Arg Ala Glu Met	
	1540 1545 1550
ttg tta gaa gaa gct aaa aga gca agc aaa agt gca aca gat gtt aaa	4704
Leu Leu Glu Glu Ala Lys Arg Ala Ser Lys Ser Ala Thr Asp Val Lys	
	1555 1560 1565
gtc act gca gat atg gta aag gaa gct ctg gaa gaa gca gaa aag gcc	4752
Val Thr Ala Asp Met Val Lys Glu Ala Leu Glu Glu Ala Glu Lys Ala	
	1570 1575 1580
cag gtc gca gca gag aag gca att aaa caa gca gat gaa gac att caa	4800
Gln Val Ala Ala Glu Lys Ala Ile Lys Gln Ala Asp Glu Asp Ile Gln	



20					25					30					
Ser	Thr	Cys	Gly	Leu	His	Lys	Pro	Glu	Pro	Tyr	Cys	Ile	Val	Ser	His
		35					40					45			
Leu	Gln	Glu	Asp	Lys	Lys	Cys	Phe	Ile	Cys	Asn	Ser	Gln	Asp	Pro	Tyr
	50					55					60				
His	Glu	Thr	Leu	Asn	Pro	Asp	Ser	His	Leu	Ile	Glu	Asn	Val	Val	Thr
	65					70					75				80
Thr	Phe	Ala	Pro	Asn	Arg	Leu	Lys	Ile	Trp	Trp	Gln	Ser	Glu	Asn	Gly
				85					90					95	
Val	Glu	Asn	Val	Thr	Ile	Gln	Leu	Asp	Leu	Glu	Ala	Glu	Phe	His	Phe
			100					105					110		
Thr	His	Leu	Ile	Met	Thr	Phe	Lys	Thr	Phe	Arg	Pro	Ala	Ala	Met	Leu
		115					120					125			
Ile	Glu	Arg	Ser	Ser	Asp	Phe	Gly	Lys	Thr	Trp	Gly	Val	Tyr	Arg	Tyr
	130					135					140				
Phe	Ala	Tyr	Asp	Cys	Glu	Ala	Ser	Phe	Pro	Gly	Ile	Ser	Thr	Gly	Pro
	145					150					155				160
Met	Lys	Lys	Val	Asp	Asp	Ile	Ile	Cys	Asp	Ser	Arg	Tyr	Ser	Asp	Ile
				165					170					175	
Glu	Pro	Ser	Thr	Glu	Gly	Glu	Val	Ile	Phe	Arg	Ala	Leu	Asp	Pro	Ala
			180					185					190		
Phe	Lys	Ile	Glu	Asp	Pro	Tyr	Ser	Pro	Arg	Ile	Gln	Asn	Leu	Leu	Lys
		195					200					205			
Ile	Thr	Asn	Leu	Arg	Ile	Lys	Phe	Val	Lys	Leu	His	Thr	Leu	Gly	Asp
	210					215					220				
Asn	Leu	Leu	Asp	Ser	Arg	Met	Glu	Ile	Arg	Glu	Lys	Tyr	Tyr	Tyr	Ala
	225					230					235				240
Val	Tyr	Asp	Met	Val	Val	Arg	Gly	Asn	Cys	Phe	Cys	Tyr	Gly	His	Ala
				245					250					255	
Ser	Glu	Cys	Ala	Pro	Val	Asp	Gly	Phe	Asn	Glu	Glu	Val	Glu	Gly	Met
			260					265					270		
Val	His	Gly	His	Cys	Met	Cys	Arg	His	Asn	Thr	Lys	Gly	Leu	Asn	Cys
		275					280					285			
Glu	Leu	Cys	Met	Asp	Phe	Tyr	His	Asp	Leu	Pro	Trp	Arg	Pro	Ala	Glu
	290					295					300				
Gly	Arg	Asn	Ser	Asn	Ala	Cys	Lys	Lys	Cys	Asn	Cys	Asn	Glu	His	Ser
	305					310					315				320
Ile	Ser	Cys	His	Phe	Asp	Met	Ala	Val	Tyr	Leu	Ala	Thr	Gly	Asn	Val
			325						330					335	
Ser	Gly	Gly	Val	Cys	Asp	Asp	Cys	Gln	His	Asn	Thr	Met	Gly	Arg	Asn
			340					345					350		

Cys	Glu	Gln	Cys	Lys	Pro	Phe	Tyr	Tyr	Gln	His	Pro	Glu	Arg	Asp	Ile		
	355						360					365					
Arg	Asp	Pro	Asn	Phe	Cys	Glu	Arg	Cys	Thr	Cys	Asp	Pro	Ala	Gly	Ser		
	370					375					380						
Gln	Asn	Glu	Gly	Ile	Cys	Asp	Ser	Tyr	Thr	Asp	Phe	Ser	Thr	Gly	Leu		
385					390					395					400		
Ile	Ala	Gly	Gln	Cys	Arg	Cys	Lys	Leu	Asn	Val	Glu	Gly	Glu	His	Cys		
				405					410					415			
Asp	Val	Cys	Lys	Glu	Gly	Phe	Tyr	Asp	Leu	Ser	Ser	Glu	Asp	Pro	Phe		
			420					425					430				
Gly	Cys	Lys	Ser	Cys	Ala	Cys	Asn	Pro	Leu	Gly	Thr	Ile	Pro	Gly	Gly		
		435					440						445				
Asn	Pro	Cys	Asp	Ser	Glu	Thr	Gly	His	Cys	Tyr	Cys	Lys	Arg	Leu	Val		
	450					455					460						
Thr	Gly	Gln	His	Cys	Asp	Gln	Cys	Leu	Pro	Glu	His	Trp	Gly	Leu	Ser		
465					470					475					480		
Asn	Asp	Leu	Asp	Gly	Cys	Arg	Pro	Cys	Asp	Cys	Asp	Leu	Gly	Gly	Ala		
				485					490					495			
Leu	Asn	Asn	Ser	Cys	Phe	Ala	Glu	Ser	Gly	Gln	Cys	Ser	Cys	Arg	Pro		
			500					505					510				
His	Met	Ile	Gly	Arg	Gln	Cys	Asn	Glu	Val	Glu	Pro	Gly	Tyr	Tyr	Phe		
		515					520						525				
Ala	Thr	Leu	Asp	His	Tyr	Leu	Tyr	Glu	Ala	Glu	Glu	Ala	Asn	Leu	Gly		
	530					535					540						
Pro	Gly	Val	Ser	Ile	Val	Glu	Arg	Gln	Tyr	Ile	Gln	Asp	Arg	Ile	Pro		
545					550					555					560		
Ser	Trp	Thr	Gly	Ala	Gly	Phe	Val	Arg	Val	Pro	Glu	Gly	Ala	Tyr	Leu		
				565					570					575			
Glu	Phe	Phe	Ile	Asp	Asn	Ile	Pro	Tyr	Ser	Met	Glu	Tyr	Asp	Ile	Leu		
			580					585					590				
Ile	Arg	Tyr	Glu	Pro	Gln	Leu	Pro	Asp	His	Trp	Glu	Lys	Ala	Val	Ile		
	595						600					605					
Thr	Val	Gln	Arg	Pro	Gly	Arg	Ile	Pro	Thr	Ser	Ser	Arg	Cys	Gly	Asn		
	610					615						620					
Thr	Ile	Pro	Asp	Asp	Asp	Asn	Gln	Val	Val	Ser	Leu	Ser	Pro	Gly	Ser		
625					630					635					640		
Arg	Tyr	Val	Val	Leu	Pro	Arg	Pro	Val	Cys	Phe	Glu	Lys	Gly	Thr	Asn		
				645					650					655			
Tyr	Thr	Val	Arg	Leu	Glu	Leu	Pro	Gln	Tyr	Thr	Ser	Ser	Asp	Ser	Asp		
			660					665					670				

Val	Glu	Ser	Pro	Tyr	Thr	Leu	Ile	Asp	Ser	Leu	Val	Leu	Met	Pro	Tyr		
		675					680					685					
Cys	Lys	Ser	Leu	Asp	Ile	Phe	Thr	Val	Gly	Gly	Ser	Gly	Asp	Gly	Val		
	690					695					700						
Val	Thr	Asn	Ser	Ala	Trp	Glu	Thr	Phe	Gln	Arg	Tyr	Arg	Cys	Leu	Glu		
705					710				715						720		
Asn	Ser	Arg	Ser	Val	Val	Lys	Thr	Pro	Met	Thr	Asp	Val	Cys	Arg	Asn		
			725						730					735			
Ile	Ile	Phe	Ser	Ile	Ser	Ala	Leu	Leu	His	Gln	Thr	Gly	Leu	Ala	Cys		
			740					745					750				
Glu	Cys	Asp	Pro	Gln	Gly	Ser	Leu	Ser	Ser	Val	Cys	Asp	Pro	Asn	Gly		
		755					760					765					
Gly	Gln	Cys	Gln	Cys	Arg	Pro	Asn	Val	Val	Gly	Arg	Thr	Cys	Asn	Arg		
	770					775					780						
Cys	Ala	Pro	Gly	Thr	Phe	Gly	Phe	Gly	Pro	Ser	Gly	Cys	Lys	Pro	Cys		
785					790					795					800		
Glu	Cys	His	Leu	Gln	Gly	Ser	Val	Asn	Ala	Phe	Cys	Asn	Pro	Val	Thr		
			805						810					815			
Gly	Gln	Cys	His	Cys	Phe	Gln	Gly	Val	Tyr	Ala	Arg	Gln	Cys	Asp	Arg		
			820					825					830				
Cys	Leu	Pro	Gly	His	Trp	Gly	Phe	Pro	Ser	Cys	Gln	Pro	Cys	Gln	Cys		
		835					840					845					
Asn	Gly	His	Ala	Asp	Asp	Cys	Asp	Pro	Val	Thr	Gly	Glu	Cys	Leu	Asn		
	850					855					860						
Cys	Gln	Asp	Tyr	Thr	Met	Gly	His	Asn	Cys	Glu	Arg	Cys	Leu	Ala	Gly		
865					870					875					880		
Tyr	Tyr	Gly	Asp	Pro	Ile	Ile	Gly	Ser	Gly	Asp	His	Cys	Arg	Pro	Cys		
			885						890					895			
Pro	Cys	Pro	Asp	Gly	Pro	Asp	Ser	Gly	Arg	Gln	Phe	Ala	Arg	Ser	Cys		
			900					905					910				
Tyr	Gln	Asp	Pro	Val	Thr	Leu	Gln	Leu	Ala	Cys	Val	Cys	Asp	Pro	Gly		
		915					920					925					
Tyr	Ile	Gly	Ser	Arg	Cys	Asp	Asp	Cys	Ala	Ser	Gly	Tyr	Phe	Gly	Asn		
	930					935					940						
Pro	Ser	Glu	Val	Gly	Gly	Ser	Cys	Gln	Pro	Cys	Gln	Cys	His	Asn	Asn		
945					950					955					960		
Ile	Asp	Thr	Thr	Asp	Pro	Glu	Ala	Cys	Asp	Lys	Glu	Thr	Gly	Arg	Cys		
				965					970					975			
Leu	Lys	Cys	Leu	Tyr	His	Thr	Glu	Gly	Glu	His	Cys	Gln	Phe	Cys	Arg		
			980					985					990				
Phe	Gly	Tyr	Tyr	Gly	Asp	Ala	Leu	Arg	Gln	Asp	Cys	Arg	Lys	Cys	Val		

995	1000	1005
Cys Asn Tyr Leu Gly Thr Val Gln Glu His Cys Asn Gly Ser Asp Cys		
1010	1015	1020
Gln Cys Asp Lys Ala Thr Gly Gln Cys Leu Cys Leu Pro Asn Val Ile		
1025	1030	1035 1040
Gly Gln Asn Cys Asp Arg Cys Ala Pro Asn Thr Trp Gln Leu Ala Ser		
	1045	1050 1055
Gly Thr Gly Cys Asp Pro Cys Asn Cys Asn Ala Ala His Ser Phe Gly		
	1060	1065 1070
Pro Ser Cys Asn Glu Phe Thr Gly Gln Cys Gln Cys Met Pro Gly Phe		
	1075	1080 1085
Gly Gly Arg Thr Cys Ser Glu Cys Gln Glu Leu Phe Trp Gly Asp Pro		
	1090	1100
Asp Val Glu Cys Arg Ala Cys Asp Cys Asp Pro Arg Gly Ile Glu Thr		
1105	1110	1115 1120
Pro Gln Cys Asp Gln Ser Thr Gly Gln Cys Val Cys Val Glu Gly Val		
	1125	1130 1135
Glu Gly Pro Arg Cys Asp Lys Cys Thr Arg Gly Tyr Ser Gly Val Phe		
	1140	1145 1150
Pro Asp Cys Thr Pro Cys His Gln Cys Phe Ala Leu Trp Asp Val Ile		
	1155	1160 1165
Ile Ala Glu Leu Thr Asn Arg Thr His Arg Phe Leu Glu Lys Ala Lys		
	1170	1175 1180
Ala Leu Lys Ile Ser Gly Val Ile Gly Pro Tyr Arg Glu Thr Val Asp		
1185	1190	1195 1200
Ser Val Glu Arg Lys Val Ser Glu Ile Lys Asp Ile Leu Ala Gln Ser		
	1205	1210 1215
Pro Ala Ala Glu Pro Leu Lys Asn Ile Gly Asn Leu Phe Glu Glu Ala		
	1220	1225 1230
Glu Lys Leu Ile Lys Asp Val Thr Glu Met Met Ala Gln Val Glu Val		
	1235	1240 1245
Lys Leu Ser Asp Thr Thr Ser Gln Ser Asn Ser Thr Ala Lys Glu Leu		
	1250	1255 1260
Asp Ser Leu Gln Thr Glu Ala Glu Ser Leu Asp Asn Thr Val Lys Glu		
1265	1270	1275 1280
Leu Ala Glu Gln Leu Glu Phe Ile Lys Asn Ser Asp Ile Arg Gly Ala		
	1285	1290 1295
Leu Asp Ser Ile Thr Lys Tyr Phe Gln Met Ser Leu Glu Ala Glu Glu		
	1300	1305 1310
Arg Val Asn Ala Ser Thr Thr Glu Pro Asn Ser Thr Val Glu Gln Ser		
	1315	1320 1325

Ala Leu Met Arg Asp Arg Val Glu Asp Val Met Met Glu Arg Glu Ser  
1330 1335 1340

Gln Phe Lys Glu Lys Gln Glu Glu Gln Ala Arg Leu Leu Asp Glu Leu  
1345 1350 1355 1360

Ala Gly Lys Leu Gln Ser Leu Asp Leu Ser Ala Ala Ala Glu Met Thr  
1365 1370 1375

Cys Gly Thr Pro Pro Gly Ala Ser Cys Ser Glu Thr Glu Cys Gly Gly  
1380 1385 1390

Pro Asn Cys Arg Thr Asp Glu Gly Glu Arg Lys Cys Gly Gly Pro Gly  
1395 1400 1405

Cys Gly Gly Leu Val Thr Val Ala His Asn Ala Trp Gln Lys Ala Met  
1410 1415 1420

Asp Leu Asp Gln Asp Val Leu Ser Ala Leu Ala Glu Val Glu Gln Leu  
1425 1430 1435 1440

Ser Lys Met Val Ser Glu Ala Lys Leu Arg Ala Asp Glu Ala Lys Gln  
1445 1450 1455

Ser Ala Glu Asp Ile Leu Leu Lys Thr Asn Ala Thr Lys Glu Lys Met  
1460 1465 1470

Asp Lys Ser Asn Glu Glu Leu Arg Asn Leu Ile Lys Gln Ile Arg Asn  
1475 1480 1485

Phe Leu Thr Gln Asp Ser Ala Asp Leu Asp Ser Ile Glu Ala Val Ala  
1490 1495 1500

Asn Glu Val Leu Lys Met Glu Met Pro Ser Thr Pro Gln Gln Leu Gln  
1505 1510 1515 1520

Asn Leu Thr Glu Asp Ile Arg Glu Arg Val Glu Ser Leu Ser Gln Val  
1525 1530 1535

Glu Val Ile Leu Gln His Ser Ala Ala Asp Ile Ala Arg Ala Glu Met  
1540 1545 1550

Leu Leu Glu Glu Ala Lys Arg Ala Ser Lys Ser Ala Thr Asp Val Lys  
1555 1560 1565

Val Thr Ala Asp Met Val Lys Glu Ala Leu Glu Glu Ala Glu Lys Ala  
1570 1575 1580

Gln Val Ala Ala Glu Lys Ala Ile Lys Gln Ala Asp Glu Asp Ile Gln  
1585 1590 1595 1600

Gly Thr Gln Asn Leu Leu Thr Ser Ile Glu Ser Glu Thr Ala Ala Ser  
1605 1610 1615

Glu Glu Thr Leu Phe Asn Ala Ser Gln Arg Ile Ser Glu Leu Glu Arg  
1620 1625 1630

Asn Val Glu Glu Leu Lys Arg Lys Ala Ala Gln Asn Ser Gly Glu Ala  
1635 1640 1645



Glu Tyr Ile Glu Lys Val Val Tyr Thr Val Lys Gln Ser Ala Glu Asp  
 1650 1655 1660  
 Val Lys Lys Thr Leu Asp Gly Glu Leu Asp Glu Lys Tyr Lys Lys Val  
 1665 1670 1675 1680  
 Glu Asn Leu Ile Ala Lys Lys Thr Glu Glu Ser Ala Asp Ala Arg Arg  
 1685 1690 1695  
 Lys Ala Glu Met Leu Gln Asn Glu Ala Lys Thr Leu Leu Ala Gln Ala  
 1700 1705 1710  
 Asn Ser Lys Leu Gln Leu Leu Lys Asp Leu Glu Arg Lys Tyr Glu Asp  
 1715 1720 1725  
 Asn Gln Arg Tyr Leu Glu Asp Lys Ala Gln Glu Leu Ala Arg Leu Glu  
 1730 1735 1740  
 Gly Glu Val Arg Ser Leu Leu Lys Asp Ile Ser Gln Lys Val Ala Val  
 1745 1750 1755 1760  
 Tyr Ser Thr Cys Leu  
 1765

<210> 9  
 <211> 5689  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (178)..(5535)

<220>  
 <221> sig\_peptide  
 <222> (178)..(240)

<400> 9  
 gccagcccc cgcttccgtg ggagcggcag gaaatggaag ggccccctctc ctctctccca 60  
 acatttgcct tttctccccg ctacctctcc agaaaggaag acccgaagaa aagacaggca 120  
 gcttgccctgc tgcgtcctcc ttcccggtgcc gcgtccctctc gtctgcgagg actggac 177  
 atg ggg ctg ctc cag gtg ttc gcc ttt ggt gtc cta gcc cta tgg ggc 225  
 Met Gly Leu Leu Gln Val Phe Ala Phe Gly Val Leu Ala Leu Trp Gly  
 1 5 10 15  
 acc cga gtg tgc gct cag gaa ccg gag ttc agc tat ggc tgc gca gaa 273  
 Thr Arg Val Cys Ala Gln Glu Pro Glu Phe Ser Tyr Gly Cys Ala Glu  
 20 25 30  
 ggc agc tgc tac cct gcc act ggc gac ctt ctc atc ggc cga gcg caa 321  
 Gly Ser Cys Tyr Pro Ala Thr Gly Asp Leu Leu Ile Gly Arg Ala Gln  
 35 40 45  
 aag ctc tcc gtg act tcg aca tgt gga ctg cac aaa cca gag ccc tac 369  
 Lys Leu Ser Val Thr Ser Thr Cys Gly Leu His Lys Pro Glu Pro Tyr  
 50 55 60

tgt att gtt agc cac ctg cag gag gac aag aaa tgc ttc ata tgt gac	417
Cys Ile Val Ser His Leu Gln Glu Asp Lys Lys Cys Phe Ile Cys Asp	
65 70 75 80	
tcc cga gac cct tat cac gag acc ctc aac ccc gac agc cat ctc att	465
Ser Arg Asp Pro Tyr His Glu Thr Leu Asn Pro Asp Ser His Leu Ile	
85 90 95	
gag aac gtg gtc acc aca ttt gct cca aac cgc ctt aag atc tgg tgg	513
Glu Asn Val Val Thr Thr Phe Ala Pro Asn Arg Leu Lys Ile Trp Trp	
100 105 110	
caa tcg gaa aat ggt gtg gag aac gtg acc atc caa ctg gac ctg gaa	561
Gln Ser Glu Asn Gly Val Glu Asn Val Thr Ile Gln Leu Asp Leu Glu	
115 120 125	
gca gaa ttc cat ttc act cat ctc atc atg acc ttc aag aca ttc cgc	609
Ala Glu Phe His Phe Thr His Leu Ile Met Thr Phe Lys Thr Phe Arg	
130 135 140	
cca gcc gcc atg ctg atc gag cgg tct tct gac ttt ggg aag act tgg	657
Pro Ala Ala Met Leu Ile Glu Arg Ser Ser Asp Phe Gly Lys Thr Trp	
145 150 155 160	
ggc gtg tac aga tac ttc gcc tac gac tgt gag agc tcg ttc cca ggc	705
Gly Val Tyr Arg Tyr Phe Ala Tyr Asp Cys Glu Ser Ser Phe Pro Gly	
165 170 175	
att tca act gga ccc atg aag aaa gtg gat gac atc atc tgt gac tct	753
Ile Ser Thr Gly Pro Met Lys Lys Val Asp Asp Ile Ile Cys Asp Ser	
180 185 190	
cga tat tct gac att gag ccc tcg aca gaa gga gag gta ata ttt cgt	801
Arg Tyr Ser Asp Ile Glu Pro Ser Thr Glu Gly Glu Val Ile Phe Arg	
195 200 205	
gct tta gat cct gct ttc aaa att gaa gac cct tat agt cca agg ata	849
Ala Leu Asp Pro Ala Phe Lys Ile Glu Asp Pro Tyr Ser Pro Arg Ile	
210 215 220	
cag aat cta tta aaa atc acc aac ttg aga atc aag ttt gtg aaa ctg	897
Gln Asn Leu Leu Lys Ile Thr Asn Leu Arg Ile Lys Phe Val Lys Leu	
225 230 235 240	
cac acc ttg ggg gat aac ctt ttg gac tcc aga atg gaa atc cga gag	945
His Thr Leu Gly Asp Asn Leu Leu Asp Ser Arg Met Glu Ile Arg Glu	
245 250 255	
aag tac tat tac gct gtt tat gat atg gtg gtt cga ggg aac tgc ttc	993
Lys Tyr Tyr Tyr Ala Val Tyr Asp Met Val Val Arg Gly Asn Cys Phe	
260 265 270	
tgc tat ggc cac gcc agt gaa tgc gcc cct gtg gat gga gtc aat gaa	1041
Cys Tyr Gly His Ala Ser Glu Cys Ala Pro Val Asp Gly Val Asn Glu	
275 280 285	
gaa gtg gaa gga atg gtt cac ggg cac tgc atg tgc aga cac aac acc	1089
Glu Val Glu Gly Met Val His Gly His Cys Met Cys Arg His Asn Thr	
290 295 300	
aaa ggc ctg aac tgt gag ctg tgc atg gat ttc tac cac gat ttg ccg	1137

Lys Gly Leu Asn Cys Glu Leu Cys Met Asp Phe Tyr His Asp Leu Pro	305	310	315	320	
tgg aga cct gct gaa ggc cgg aac agc aac gcc tgc aaa aaa tgt aac	1185				
Trp Arg Pro Ala Glu Gly Arg Asn Ser His Phe Asp Met Ala Val Phe Leu		325	330	335	
tgc aat gaa cat tcc agc tcg tgt cac ttt gac atg gca gtc ttc ctg	1233				
Cys Asn Glu His Ser Ser Ser Cys His Phe Asp Met Ala Val Phe Leu		340	345	350	
gct act ggc aac gtc agc ggg gga gtg tgt gat aac tgt cag cac aac	1281				
Ala Thr Gly Asn Val Ser Gly Gly Val Cys Asp Asn Cys Gln His Asn		355	360	365	
acc atg ggg cgc aac tgt gaa cag tgc aaa ccg ttc tac ttc cag cac	1329				
Thr Met Gly Arg Asn Cys Glu Gln Cys Lys Pro Phe Tyr Phe Gln His		370	375	380	
cct gag agg gac atc cgg gac ccc aat ctc tgt gaa cca tgt acc tgt	1377				
Pro Glu Arg Asp Ile Arg Asp Pro Asn Leu Cys Glu Pro Cys Thr Cys		385	390	395	400
gac cca gct ggt tct gag aat ggc ggg atc tgt gat ggg tac act gat	1425				
Asp Pro Ala Gly Ser Glu Asn Gly Gly Ile Cys Asp Gly Tyr Thr Asp		405	410	415	
ttt tct gtg ggt ctc att gct ggt cag tgt cgg tgc aaa ttg cac gtg	1473				
Phe Ser Val Gly Leu Ile Ala Gly Gln Cys Arg Cys Lys Leu His Val		420	425	430	
gag gga gag cgc tgt gat gtt tgt aaa gaa ggc ttc tac gac tta agt	1521				
Glu Gly Glu Arg Cys Asp Val Cys Lys Glu Gly Phe Tyr Asp Leu Ser		435	440	445	
gct gaa gac ccg tat ggt tgt aaa tca tgt gct tgc aat cct ctg gga	1569				
Ala Glu Asp Pro Tyr Gly Cys Lys Ser Cys Ala Cys Asn Pro Leu Gly		450	455	460	
aca att cct ggt ggg aat cct tgt gat tct gag act ggc tac tgc tac	1617				
Thr Ile Pro Gly Gly Asn Pro Cys Asp Ser Glu Thr Gly Tyr Cys Tyr		465	470	475	480
tgt aag cgc ctg gtg aca gga cag cgc tgt gac cag tgc ctg ccg cag	1665				
Cys Lys Arg Leu Val Thr Gly Gln Arg Cys Asp Gln Cys Leu Pro Gln		485	490	495	
cac tgg ggt tta agc aat gat ttg gat ggg tgt cga cct tgt gac tgt	1713				
His Trp Gly Leu Ser Asn Asp Leu Asp Gly Cys Arg Pro Cys Asp Cys		500	505	510	
gac ctt gga ggg gcg ctg aac aat agc tgc tcc gag gac tcc ggc cag	1761				
Asp Leu Gly Gly Ala Leu Asn Asn Ser Cys Ser Glu Asp Ser Gly Gln		515	520	525	
tgc tcc tgc ctg ccc cac atg att ggg cgg cag tgt aac gag gtg gag	1809				
Cys Ser Cys Leu Pro His Met Ile Gly Arg Gln Cys Asn Glu Val Glu		530	535	540	
tcc ggt tac tac ttc acc acc ctg gac cac tac atc tac gaa gcc gag	1857				
Ser Gly Tyr Tyr Phe Thr Thr Leu Asp His Tyr Ile Tyr Glu Ala Glu					

545	550	555	560	
gaa gcc aat ctg ggg cct gga gtc gtt gtg gtg gaa agg cag tac att Glu Ala Asn Leu Gly Pro Gly Val Val Val Val Glu Arg Gln Tyr Ile 565 570 575				1905
cag gac cgc att cct tcc tgg aca gga cct ggc ttc gtc cgg gtg cct Gln Asp Arg Ile Pro Ser Trp Thr Gly Pro Gly Phe Val Arg Val Pro 580 585 590				1953
gaa ggg gct tat ttg gag ttt ttc att gac aac ata cca tat tcc atg Glu Gly Ala Tyr Leu Glu Phe Phe Ile Asp Asn Ile Pro Tyr Ser Met 595 600 605				2001
gag tat gaa atc ctg att cgc tat gag cca cag ctg ccg gac cac tgg Glu Tyr Glu Ile Leu Ile Arg Tyr Glu Pro Gln Leu Pro Asp His Trp 610 615 620				2049
gag aaa gct gtc atc act gta cag cgg ccg ggg aag att cca gcc agc Glu Lys Ala Val Ile Thr Val Gln Arg Pro Gly Lys Ile Pro Ala Ser 625 630 635 640				2097
agc cga tgt ggt aac acc gtt ccc gat gat gac aac cag gtg gtg tcc Ser Arg Cys Gly Asn Thr Val Pro Asp Asp Asp Asn Gln Val Val Ser 645 650 655				2145
ttg tca ccg ggc tca aga tac gtt gtc ctc cct cgc ccc gtg tgc ttt Leu Ser Pro Gly Ser Arg Tyr Val Val Leu Pro Arg Pro Val Cys Phe 660 665 670				2193
gag aag gga atg aac tac acg gtg agg ttg gag ctg ccc cag tat acg Glu Lys Gly Met Asn Tyr Thr Val Arg Leu Glu Leu Pro Gln Tyr Thr 675 680 685				2241
gca tcg ggc agt gac gtg gag agc cct tac acg ttc atc gac tcg ctt Ala Ser Gly Ser Asp Val Glu Ser Pro Tyr Thr Phe Ile Asp Ser Leu 690 695 700				2289
gtt ctc atg ccc tac tgt aaa tcg ctg gac atc ttc act gtt ggc ggc Val Leu Met Pro Tyr Cys Lys Ser Leu Asp Ile Phe Thr Val Gly Gly 705 710 715 720				2337
tca ggc gat ggg gag gtc acc aat agt gcc tgg gaa acc ttc cag cgc Ser Gly Asp Gly Glu Val Thr Asn Ser Ala Trp Glu Thr Phe Gln Arg 725 730 735				2385
tac agg tgt ctg gag aac agc agg agt gtg gta aaa aca ccc atg aca Tyr Arg Cys Leu Glu Asn Ser Arg Ser Val Val Lys Thr Pro Met Thr 740 745 750				2433
gat gtc tgc aga aac att atc ttc agc att tct gcc ttg att cac cag Asp Val Cys Arg Asn Ile Ile Phe Ser Ile Ser Ala Leu Ile His Gln 755 760 765				2481
acg ggc ctt gct tgt gaa tgt gac ccc cag gga tct ctg agt tct gtg Thr Gly Leu Ala Cys Glu Cys Asp Pro Gln Gly Ser Leu Ser Ser Val 770 775 780				2529
tgt gac ccc aat ggt ggc cag tgc cag tgc cgt cct aat gtg gtt gga Cys Asp Pro Asn Gly Gly Gln Cys Gln Cys Arg Pro Asn Val Val Gly 785 790 795 800				2577

aga acc tgc aac agg tgt gcc ccg ggc acc ttt ggc ttt ggc ccc aac	2625
Arg Thr Cys Asn Arg Cys Ala Pro Gly Thr Phe Gly Phe Gly Pro Asn	
805 810 815	
gga tgc aaa cct tgt gac tgc cat ctg caa ggg tct gcc agt gcc ttc	2673
Gly Cys Lys Pro Cys Asp Cys His Leu Gln Gly Ser Ala Ser Ala Phe	
820 825 830	
tgc gat gcg atc act ggc cag tgc cac tgt ttc cag ggc atc tat gct	2721
Cys Asp Ala Ile Thr Gly Gln Cys His Cys Phe Gln Gly Ile Tyr Ala	
835 840 845	
cgg cag tgt gac cga tgt ctc cct ggg tat tgg ggc ttt ccc agc tgc	2769
Arg Gln Cys Asp Arg Cys Leu Pro Gly Tyr Trp Gly Phe Pro Ser Cys	
850 855 860	
cag ccc tgc cag tgt aat ggt cat gct cta gac tgt gac aca gtg aca	2817
Gln Pro Cys Gln Cys Asn Gly His Ala Leu Asp Cys Asp Thr Val Thr	
865 870 875 880	
ggg gag tgt ctg agc tgt cag gac tac acc acg ggc cac aac tgc gaa	2865
Gly Glu Cys Leu Ser Cys Gln Asp Tyr Thr Thr Gly His Asn Cys Glu	
885 890 895	
agg tgc ctg gct ggc tac tac ggt gat ccc atc att ggg tca gga gac	2913
Arg Cys Leu Ala Gly Tyr Tyr Gly Asp Pro Ile Ile Gly Ser Gly Asp	
900 905 910	
cac tgt cgc cct tgc cct tgt cct gat ggt cct gac agt gga cga cag	2961
His Cys Arg Pro Cys Pro Cys Pro Asp Gly Pro Asp Ser Gly Arg Gln	
915 920 925	
ttt gcc agg agc tgt tat caa gac ccc gtc act ctc cag ctt gcg tgt	3009
Phe Ala Arg Ser Cys Tyr Gln Asp Pro Val Thr Leu Gln Leu Ala Cys	
930 935 940	
gtt tgt gat cct ggg tac att ggc tcc aga tgt gat gac tgt gcc tct	3057
Val Cys Asp Pro Gly Tyr Ile Gly Ser Arg Cys Asp Asp Cys Ala Ser	
945 950 955 960	
gga ttt ttt ggc aat ccc tca gac ttt ggg ggt tca tgt caa ccg tgt	3105
Gly Phe Phe Gly Asn Pro Ser Asp Phe Gly Gly Ser Cys Gln Pro Cys	
965 970 975	
cag tgc cac cac aac att gac act acc gat cca gaa gcc tgt gac aag	3153
Gln Cys His His Asn Ile Asp Thr Thr Asp Pro Glu Ala Cys Asp Lys	
980 985 990	
gac acg gga cga tgc ctc aag tgc ctg tac cac acg gaa ggg gac cat	3201
Asp Thr Gly Arg Cys Leu Lys Cys Leu Tyr His Thr Glu Gly Asp His	
995 1000 1005	
tgc cag ctc tgc cag tat ggg tac tac ggc gat gct ctt cgg caa gac	3249
Cys Gln Leu Cys Gln Tyr Gly Tyr Tyr Gly Asp Ala Leu Arg Gln Asp	
1010 1015 1020	
tgt aga aag tgt gtc tgc aat tac ctg ggc acg gtg aag gaa cat tgt	3297
Cys Arg Lys Cys Val Cys Asn Tyr Leu Gly Thr Val Lys Glu His Cys	
1025 1030 1035 1040	

aat ggc tct gac tgc cac tgt gac aaa gcc act ggt cag tgc tcg tgc	3345
Asn Gly Ser Asp Cys His Cys Asp Lys Ala Thr Gly Gln Cys Ser Cys	
1045 1050 1055	
ctt ccc aat gtg atc ggg cag aac tgt gac cgg tgt gcg ccc aac acc	3393
Leu Pro Asn Val Ile Gly Gln Asn Cys Asp Arg Cys Ala Pro Asn Thr	
1060 1065 1070	
tgg cag ctg gct agc ggg act ggc tgc ggg ccc tgc aat tgc aat gct	3441
Trp Gln Leu Ala Ser Gly Thr Gly Cys Gly Pro Cys Asn Cys Asn Ala	
1075 1080 1085	
gcg cat tcc ttt ggg cca tcc tgc aac gag ttc aca ggg cag tgc cag	3489
Ala His Ser Phe Gly Pro Ser Cys Asn Glu Phe Thr Gly Gln Cys Gln	
1090 1095 1100	
tgc atg ccg ggc ttt gga ggc cga acc tgc agc gag tgc cag gag ctc	3537
Cys Met Pro Gly Phe Gly Arg Thr Cys Ser Glu Cys Gln Glu Leu	
1105 1110 1115 1120	
ttc tgg gga gac cct gat gtg gaa tgc cga gcc tgt gac tgt gat ccc	3585
Phe Trp Gly Asp Pro Asp Val Glu Cys Arg Ala Cys Asp Cys Asp Pro	
1125 1130 1135	
agg ggc att gag aca cct cag tgt gac cag tcc acg ggc cag tgt gtc	3633
Arg Gly Ile Glu Thr Pro Gln Cys Asp Gln Ser Thr Gly Gln Cys Val	
1140 1145 1150	
tgt gtg gag ggt gta gag ggt cct cgc tgc gac aag tgc acc aga ggt	3681
Cys Val Glu Gly Val Glu Gly Pro Arg Cys Asp Lys Cys Thr Arg Gly	
1155 1160 1165	
tac tcg ggg gtc ttt cct gac tgc aca ccc tgc cac cag tgc ttt gct	3729
Tyr Ser Gly Val Phe Pro Asp Cys Thr Pro Cys His Gln Cys Phe Ala	
1170 1175 1180	
ctc tgg gat gct atc att ggt gag ctg acc aac agg acc cac aaa ttc	3777
Leu Trp Asp Ala Ile Ile Gly Glu Leu Thr Asn Arg Thr His Lys Phe	
1185 1190 1195 1200	
ctg gag aaa gcc aag gct ctg aaa atc agt ggt gtg att ggt ccc tac	3825
Leu Glu Lys Ala Lys Ala Leu Lys Ile Ser Gly Val Ile Gly Pro Tyr	
1205 1210 1215	
cga gag acc gtg gac tct gta gag aag aaa gtc aat gag ata aaa gac	3873
Arg Glu Thr Val Asp Ser Val Glu Lys Lys Val Asn Glu Ile Lys Asp	
1220 1225 1230	
atc ctg gcc cag agc cca gca gcg gaa cca ctg aaa aac att ggc att	3921
Ile Leu Ala Gln Ser Pro Ala Ala Glu Pro Leu Lys Asn Ile Gly Ile	
1235 1240 1245	
ctc ttc gag gag gca gag aaa cta acc aaa gat gtc aca gaa aag atg	3969
Leu Phe Glu Glu Ala Glu Lys Leu Thr Lys Asp Val Thr Glu Lys Met	
1250 1255 1260	
gcg cag gta gaa gtg aaa tta act gat aca gct tca cag agt aac agc	4017
Ala Gln Val Glu Val Lys Leu Thr Asp Thr Ala Ser Gln Ser Asn Ser	
1265 1270 1275 1280	
aca gct gga gag ctc ggc gca ctg cag gca gaa gca gag agc ctt gac	4065

Thr Ala Gly Glu Leu Gly Ala Leu Gln Ala Glu Ala Glu Ser Leu Asp	
1285 1290 1295	
aag acc gtg aag gag ctg gca gaa cag ctg gag ttt atc aaa aac tcc	4113
Lys Thr Val Lys Glu Leu Ala Glu Gln Leu Glu Phe Ile Lys Asn Ser	
1300 1305 1310	
gat att cag ggc gcc ttg gat agc atc acc aag tat ttc cag atg tct	4161
Asp Ile Gln Gly Ala Leu Asp Ser Ile Thr Lys Tyr Phe Gln Met Ser	
1315 1320 1325	
ctt gag gca gag aag cgg gtg aat gcc tcc acc aca gac ccc aac agc	4209
Leu Glu Ala Glu Lys Arg Val Asn Ala Ser Thr Thr Asp Pro Asn Ser	
1330 1335 1340	
act gtg gag cag tct gcc ctg acg cga gac aga gta gaa gat ctg atg	4257
Thr Val Glu Gln Ser Ala Leu Thr Arg Asp Arg Val Glu Asp Leu Met	
1345 1350 1355 1360	
ttg gag cga gag tct ccg ttc aag gag cag cag gag gaa cag gca cgc	4305
Leu Glu Arg Glu Ser Pro Phe Lys Glu Gln Gln Glu Glu Gln Ala Arg	
1365 1370 1375	
ctc ctg gac gaa ctg gcc ggc aaa ctg caa agt ctc gac ctg tcg gct	4353
Leu Leu Asp Glu Leu Ala Gly Lys Leu Gln Ser Leu Asp Leu Ser Ala	
1380 1385 1390	
gct gca cag atg acc tgt gga aca cct cca ggg gct gac tgt tct gaa	4401
Ala Ala Gln Met Thr Cys Gly Thr Pro Pro Gly Ala Asp Cys Ser Glu	
1395 1400 1405	
agt gaa tgt ggt ggc ccc aac tgc aga act gac gaa gga gag aag aag	4449
Ser Glu Cys Gly Gly Pro Asn Cys Arg Thr Asp Glu Gly Glu Lys Lys	
1410 1415 1420	
tgt ggg ggg cct ggc tgt ggt ggt ctg gtc act gtg gcc cac agt gct	4497
Cys Gly Gly Pro Gly Cys Gly Gly Leu Val Thr Val Ala His Ser Ala	
1425 1430 1435 1440	
tgg cag aaa gcc atg gat ttt gac cgt gat gtc ctg agt gcc ctg gct	4545
Trp Gln Lys Ala Met Asp Phe Asp Arg Asp Val Leu Ser Ala Leu Ala	
1445 1450 1455	
gaa gtc gaa cag ctg tcc aag atg gtc tct gaa gca aaa gtg aga gca	4593
Glu Val Glu Gln Leu Ser Lys Met Val Ser Glu Ala Lys Val Arg Ala	
1460 1465 1470	
gat gag gcg aag cag aat gcg cag gat gtc ctg tta aaa aca aat gct	4641
Asp Glu Ala Lys Gln Asn Ala Gln Asp Val Leu Leu Lys Thr Asn Ala	
1475 1480 1485	
acc aaa gaa aaa gtg gac aag agc aac gag gac ctg cgg aac ctg atc	4689
Thr Lys Glu Lys Val Asp Lys Ser Asn Glu Asp Leu Arg Asn Leu Ile	
1490 1495 1500	
aag cag atc aga aac ttc ctg act gag gat agt gct gat cta gac agt	4737
Lys Gln Ile Arg Asn Phe Leu Thr Glu Asp Ser Ala Asp Leu Asp Ser	
1505 1510 1515 1520	
att gaa gca gtt gct aat gaa gta ctg aaa agt gga aat gct agc acg	4785
Ile Glu Ala Val Ala Asn Glu Val Leu Lys Ser Gly Asn Ala Ser Thr	

1525	1530	1535	
cca cag cag tta cag aac cta aca gaa gac att cgg gag cga gtt gaa Pro Gln Gln Leu Gln Asn Leu Thr Glu Asp Ile Arg Glu Arg Val Glu 1540 1545 1550			4833
acc ctc tct caa gta gag gtt att ttg cag cag agt gca gct gac att Thr Leu Ser Gln Val Glu Val Ile Leu Gln Gln Ser Ala Ala Asp Ile 1555 1560 1565			4881
gcc aga gct gag ctg ttg ctt gag gaa gct aag aga gca agc aaa agt Ala Arg Ala Glu Leu Leu Leu Glu Glu Ala Lys Arg Ala Ser Lys Ser 1570 1575 1580			4929
gca aca gat gtt aaa gtc act gca gac atg gtg aag gaa gca tta gaa Ala Thr Asp Val Lys Val Thr Ala Asp Met Val Lys Glu Ala Leu Glu 1585 1590 1595 1600			4977
gaa gca gaa aag gcc cag gtt gca gca gag aag gcg att aaa caa gct Glu Ala Glu Lys Ala Gln Val Ala Ala Glu Lys Ala Ile Lys Gln Ala 1605 1610 1615			5025
gat gag gat atc caa gga acc caa aac ctg cta aca tcg att gaa tct Asp Glu Asp Ile Gln Gly Thr Gln Asn Leu Leu Thr Ser Ile Glu Ser 1620 1625 1630			5073
gaa acg gca gct tct gag gaa acc ctg acc aac gcc tcc cag cgc atc Glu Thr Ala Ala Ser Glu Glu Thr Leu Thr Asn Ala Ser Gln Arg Ile 1635 1640 1645			5121
agc aag ctt gag agg aac gtg gaa gag ctt aag cgt aaa gct gcc cag Ser Lys Leu Glu Arg Asn Val Glu Glu Leu Lys Arg Lys Ala Ala Gln 1650 1655 1660			5169
aac tct ggg gag gca gaa tat atc gaa aaa gta gta tat tct gta aaa Asn Ser Gly Glu Ala Glu Tyr Ile Glu Lys Val Val Tyr Ser Val Lys 1665 1670 1675 1680			5217
cag aat gca gac gat gtt aaa aag act cta gat ggc gaa ctt gat gaa Gln Asn Ala Asp Asp Val Lys Lys Thr Leu Asp Gly Glu Leu Asp Glu 1685 1690 1695			5265
aag tat aag aag gta gaa agt tta att gcc caa aaa act gaa gag tca Lys Tyr Lys Lys Val Glu Ser Leu Ile Ala Gln Lys Thr Glu Glu Ser 1700 1705 1710			5313
gca gat gcc agg agg aaa gct gag ctg cta caa aat gaa gca aaa aca Ala Asp Ala Arg Arg Lys Ala Glu Leu Leu Gln Asn Glu Ala Lys Thr 1715 1720 1725			5361
ctc ttg gct caa gct aac agc aag ctc cag ctg ttg gaa gac tta gaa Leu Leu Ala Gln Ala Asn Ser Lys Leu Gln Leu Leu Glu Asp Leu Glu 1730 1735 1740			5409
aga aaa tat gag gac aat caa aaa tac tta gaa gat aaa gct caa gaa Arg Lys Tyr Glu Asp Asn Gln Lys Tyr Leu Glu Asp Lys Ala Gln Glu 1745 1750 1755 1760			5457
ttg gtg cga ctg gaa gga gag gtt cgc tcc ctc ctt aag gac ata agt Leu Val Arg Leu Glu Gly Glu Val Arg Ser Leu Leu Lys Asp Ile Ser 1765 1770 1775			5505



gag aaa gtt gcg gtt tac agc acc tgc tta taacaggaag gggctgtaga 5555  
 Glu Lys Val Ala Val Tyr Ser Thr Cys Leu  
 1780 1785

ggggctcggg gaccaaggta aaccacacgc gcaaaccgag gcagtcattt acaaataacc 5615  
 catcatctat ttaatgtttt taaccaccta cttttgtatg gagttaata aaagacattg 5675  
 gttttgtata aaca 5689

<210> 10  
 <211> 1786  
 <212> PRT  
 <213> Mus musculus

<400> 10  
 Met Gly Leu Leu Gln Val Phe Ala Phe Gly Val Leu Ala Leu Trp Gly  
 1 5 10 15  
 Thr Arg Val Cys Ala Gln Glu Pro Glu Phe Ser Tyr Gly Cys Ala Glu  
 20 25 30  
 Gly Ser Cys Tyr Pro Ala Thr Gly Asp Leu Leu Ile Gly Arg Ala Gln  
 35 40 45  
 Lys Leu Ser Val Thr Ser Thr Cys Gly Leu His Lys Pro Glu Pro Tyr  
 50 55 60  
 Cys Ile Val Ser His Leu Gln Glu Asp Lys Lys Cys Phe Ile Cys Asp  
 65 70 75 80  
 Ser Arg Asp Pro Tyr His Glu Thr Leu Asn Pro Asp Ser His Leu Ile  
 85 90 95  
 Glu Asn Val Val Thr Thr Phe Ala Pro Asn Arg Leu Lys Ile Trp Trp  
 100 105 110  
 Gln Ser Glu Asn Gly Val Glu Asn Val Thr Ile Gln Leu Asp Leu Glu  
 115 120 125  
 Ala Glu Phe His Phe Thr His Leu Ile Met Thr Phe Lys Thr Phe Arg  
 130 135 140  
 Pro Ala Ala Met Leu Ile Glu Arg Ser Ser Asp Phe Gly Lys Thr Trp  
 145 150 155 160  
 Gly Val Tyr Arg Tyr Phe Ala Tyr Asp Cys Glu Ser Ser Phe Pro Gly  
 165 170 175  
 Ile Ser Thr Gly Pro Met Lys Lys Val Asp Asp Ile Ile Cys Asp Ser  
 180 185 190  
 Arg Tyr Ser Asp Ile Glu Pro Ser Thr Glu Gly Glu Val Ile Phe Arg  
 195 200 205  
 Ala Leu Asp Pro Ala Phe Lys Ile Glu Asp Pro Tyr Ser Pro Arg Ile  
 210 215 220  
 Gln Asn Leu Leu Lys Ile Thr Asn Leu Arg Ile Lys Phe Val Lys Leu

225		230		235		240
His Thr Leu Gly Asp	Asn Leu Leu Asp	Ser Arg Met Glu Ile Arg Glu				
	245		250			255
Lys Tyr Tyr Tyr Ala Val Tyr Asp	Met Val Val Arg Gly Asn Cys Phe					
	260		265			270
Cys Tyr Gly His Ala Ser Glu Cys Ala Pro Val Asp	Gly Val Asn Glu					
	275		280			285
Glu Val Glu Gly Met Val His Gly His Cys Met Cys Arg His Asn Thr						
	290		295			300
Lys Gly Leu Asn Cys Glu Leu Cys Met Asp Phe Tyr His Asp Leu Pro						
	305		310			315
Trp Arg Pro Ala Glu Gly Arg Asn Ser Asn Ala Cys Lys Lys Cys Asn						
	325		330			335
Cys Asn Glu His Ser Ser Ser Cys His Phe Asp Met Ala Val Phe Leu						
	340		345			350
Ala Thr Gly Asn Val Ser Gly Gly Val Cys Asp Asn Cys Gln His Asn						
	355		360			365
Thr Met Gly Arg Asn Cys Glu Gln Cys Lys Pro Phe Tyr Phe Gln His						
	370		375			380
Pro Glu Arg Asp Ile Arg Asp Pro Asn Leu Cys Glu Pro Cys Thr Cys						
	385		390			395
Asp Pro Ala Gly Ser Glu Asn Gly Gly Ile Cys Asp Gly Tyr Thr Asp						
	405		410			415
Phe Ser Val Gly Leu Ile Ala Gly Gln Cys Arg Cys Lys Leu His Val						
	420		425			430
Glu Gly Glu Arg Cys Asp Val Cys Lys Glu Gly Phe Tyr Asp Leu Ser						
	435		440			445
Ala Glu Asp Pro Tyr Gly Cys Lys Ser Cys Ala Cys Asn Pro Leu Gly						
	450		455			460
Thr Ile Pro Gly Gly Asn Pro Cys Asp Ser Glu Thr Gly Tyr Cys Tyr						
	465		470			475
Cys Lys Arg Leu Val Thr Gly Gln Arg Cys Asp Gln Cys Leu Pro Gln						
	485		490			495
His Trp Gly Leu Ser Asn Asp Leu Asp Gly Cys Arg Pro Cys Asp Cys						
	500		505			510
Asp Leu Gly Gly Ala Leu Asn Asn Ser Cys Ser Glu Asp Ser Gly Gln						
	515		520			525
Cys Ser Cys Leu Pro His Met Ile Gly Arg Gln Cys Asn Glu Val Glu						
	530		535			540
Ser Gly Tyr Tyr Phe Thr Thr Leu Asp His Tyr Ile Tyr Glu Ala Glu						
	545		550			555
						560

Glu	Ala	Asn	Leu	Gly	Pro	Gly	Val	Val	Val	Val	Glu	Arg	Gln	Tyr	Ile	565	570	575	
Gln	Asp	Arg	Ile	Pro	Ser	Trp	Thr	Gly	Pro	Gly	Phe	Val	Arg	Val	Pro	580	585	590	
Glu	Gly	Ala	Tyr	Leu	Glu	Phe	Phe	Ile	Asp	Asn	Ile	Pro	Tyr	Ser	Met	595	600	605	
Glu	Tyr	Glu	Ile	Leu	Ile	Arg	Tyr	Glu	Pro	Gln	Leu	Pro	Asp	His	Trp	610	615	620	
Glu	Lys	Ala	Val	Ile	Thr	Val	Gln	Arg	Pro	Gly	Lys	Ile	Pro	Ala	Ser	625	630	635	640
Ser	Arg	Cys	Gly	Asn	Thr	Val	Pro	Asp	Asp	Asp	Asn	Gln	Val	Val	Ser	645	650	655	
Leu	Ser	Pro	Gly	Ser	Arg	Tyr	Val	Val	Leu	Pro	Arg	Pro	Val	Cys	Phe	660	665	670	
Glu	Lys	Gly	Met	Asn	Tyr	Thr	Val	Arg	Leu	Glu	Leu	Pro	Gln	Tyr	Thr	675	680	685	
Ala	Ser	Gly	Ser	Asp	Val	Glu	Ser	Pro	Tyr	Thr	Phe	Ile	Asp	Ser	Leu	690	695	700	
Val	Leu	Met	Pro	Tyr	Cys	Lys	Ser	Leu	Asp	Ile	Phe	Thr	Val	Gly	Gly	705	710	715	720
Ser	Gly	Asp	Gly	Glu	Val	Thr	Asn	Ser	Ala	Trp	Glu	Thr	Phe	Gln	Arg	725	730	735	
Tyr	Arg	Cys	Leu	Glu	Asn	Ser	Arg	Ser	Val	Val	Lys	Thr	Pro	Met	Thr	740	745	750	
Asp	Val	Cys	Arg	Asn	Ile	Ile	Phe	Ser	Ile	Ser	Ala	Leu	Ile	His	Gln	755	760	765	
Thr	Gly	Leu	Ala	Cys	Glu	Cys	Asp	Pro	Gln	Gly	Ser	Leu	Ser	Ser	Val	770	775	780	
Cys	Asp	Pro	Asn	Gly	Gly	Gln	Cys	Gln	Cys	Arg	Pro	Asn	Val	Val	Gly	785	790	795	800
Arg	Thr	Cys	Asn	Arg	Cys	Ala	Pro	Gly	Thr	Phe	Gly	Phe	Gly	Pro	Asn	805	810	815	
Gly	Cys	Lys	Pro	Cys	Asp	Cys	His	Leu	Gln	Gly	Ser	Ala	Ser	Ala	Phe	820	825	830	
Cys	Asp	Ala	Ile	Thr	Gly	Gln	Cys	His	Cys	Phe	Gln	Gly	Ile	Tyr	Ala	835	840	845	
Arg	Gln	Cys	Asp	Arg	Cys	Leu	Pro	Gly	Tyr	Trp	Gly	Phe	Pro	Ser	Cys	850	855	860	
Gln	Pro	Cys	Gln	Cys	Asn	Gly	His	Ala	Leu	Asp	Cys	Asp	Thr	Val	Thr	865	870	875	880

Gly Glu Cys Leu Ser Cys Gln Asp Tyr Thr Thr Gly His Asn Cys Glu  
885 890 895

Arg Cys Leu Ala Gly Tyr Tyr Gly Asp Pro Ile Ile Gly Ser Gly Asp  
900 905 910

His Cys Arg Pro Cys Pro Cys Pro Asp Gly Pro Asp Ser Gly Arg Gln  
915 920 925

Phe Ala Arg Ser Cys Tyr Gln Asp Pro Val Thr Leu Gln Leu Ala Cys  
930 935 940

Val Cys Asp Pro Gly Tyr Ile Gly Ser Arg Cys Asp Asp Cys Ala Ser  
945 950 955 960

Gly Phe Phe Gly Asn Pro Ser Asp Phe Gly Gly Ser Cys Gln Pro Cys  
965 970 975

Gln Cys His His Asn Ile Asp Thr Thr Asp Pro Glu Ala Cys Asp Lys  
980 985 990

Asp Thr Gly Arg Cys Leu Lys Cys Leu Tyr His Thr Glu Gly Asp His  
995 1000 1005

Cys Gln Leu Cys Gln Tyr Gly Tyr Tyr Gly Asp Ala Leu Arg Gln Asp  
1010 1015 1020

Cys Arg Lys Cys Val Cys Asn Tyr Leu Gly Thr Val Lys Glu His Cys  
1025 1030 1035 1040

Asn Gly Ser Asp Cys His Cys Asp Lys Ala Thr Gly Gln Cys Ser Cys  
1045 1050 1055

Leu Pro Asn Val Ile Gly Gln Asn Cys Asp Arg Cys Ala Pro Asn Thr  
1060 1065 1070

Trp Gln Leu Ala Ser Gly Thr Gly Cys Gly Pro Cys Asn Cys Asn Ala  
1075 1080 1085

Ala His Ser Phe Gly Pro Ser Cys Asn Glu Phe Thr Gly Gln Cys Gln  
1090 1095 1100

Cys Met Pro Gly Phe Gly Gly Arg Thr Cys Ser Glu Cys Gln Glu Leu  
1105 1110 1115 1120

Phe Trp Gly Asp Pro Asp Val Glu Cys Arg Ala Cys Asp Cys Asp Pro  
1125 1130 1135

Arg Gly Ile Glu Thr Pro Gln Cys Asp Gln Ser Thr Gly Gln Cys Val  
1140 1145 1150

Cys Val Glu Gly Val Glu Gly Pro Arg Cys Asp Lys Cys Thr Arg Gly  
1155 1160 1165

Tyr Ser Gly Val Phe Pro Asp Cys Thr Pro Cys His Gln Cys Phe Ala  
1170 1175 1180

Leu Trp Asp Ala Ile Ile Gly Glu Leu Thr Asn Arg Thr His Lys Phe  
1185 1190 1195 1200

Leu Glu Lys Ala Lys Ala Leu Lys Ile Ser Gly Val Ile Gly Pro Tyr

1205	1210	1215
Arg Glu Thr Val Asp Ser Val Glu Lys Lys Val Asn Glu Ile Lys Asp		
1220	1225	1230
Ile Leu Ala Gln Ser Pro Ala Ala Glu Pro Leu Lys Asn Ile Gly Ile		
1235	1240	1245
Leu Phe Glu Glu Ala Glu Lys Leu Thr Lys Asp Val Thr Glu Lys Met		
1250	1255	1260
Ala Gln Val Glu Val Lys Leu Thr Asp Thr Ala Ser Gln Ser Asn Ser		
1265	1270	1275
Thr Ala Gly Glu Leu Gly Ala Leu Gln Ala Glu Ala Glu Ser Leu Asp		
1285	1290	1295
Lys Thr Val Lys Glu Leu Ala Glu Gln Leu Glu Phe Ile Lys Asn Ser		
1300	1305	1310
Asp Ile Gln Gly Ala Leu Asp Ser Ile Thr Lys Tyr Phe Gln Met Ser		
1315	1320	1325
Leu Glu Ala Glu Lys Arg Val Asn Ala Ser Thr Thr Asp Pro Asn Ser		
1330	1335	1340
Thr Val Glu Gln Ser Ala Leu Thr Arg Asp Arg Val Glu Asp Leu Met		
1345	1350	1355
Leu Glu Arg Glu Ser Pro Phe Lys Glu Gln Gln Glu Glu Gln Ala Arg		
1365	1370	1375
Leu Leu Asp Glu Leu Ala Gly Lys Leu Gln Ser Leu Asp Leu Ser Ala		
1380	1385	1390
Ala Ala Gln Met Thr Cys Gly Thr Pro Pro Gly Ala Asp Cys Ser Glu		
1395	1400	1405
Ser Glu Cys Gly Gly Pro Asn Cys Arg Thr Asp Glu Gly Glu Lys Lys		
1410	1415	1420
Cys Gly Gly Pro Gly Cys Gly Gly Leu Val Thr Val Ala His Ser Ala		
1425	1430	1435
Trp Gln Lys Ala Met Asp Phe Asp Arg Asp Val Leu Ser Ala Leu Ala		
1445	1450	1455
Glu Val Glu Gln Leu Ser Lys Met Val Ser Glu Ala Lys Val Arg Ala		
1460	1465	1470
Asp Glu Ala Lys Gln Asn Ala Gln Asp Val Leu Leu Lys Thr Asn Ala		
1475	1480	1485
Thr Lys Glu Lys Val Asp Lys Ser Asn Glu Asp Leu Arg Asn Leu Ile		
1490	1495	1500
Lys Gln Ile Arg Asn Phe Leu Thr Glu Asp Ser Ala Asp Leu Asp Ser		
1505	1510	1515
Ile Glu Ala Val Ala Asn Glu Val Leu Lys Ser Gly Asn Ala Ser Thr		
1525	1530	1535

Pro Gln Gln Leu Gln Asn Leu Thr Glu Asp Ile Arg Glu Arg Val Glu  
1540 1545 1550

Thr Leu Ser Gln Val Glu Val Ile Leu Gln Gln Ser Ala Ala Asp Ile  
1555 1560 1565

Ala Arg Ala Glu Leu Leu Leu Glu Glu Ala Lys Arg Ala Ser Lys Ser  
1570 1575 1580

Ala Thr Asp Val Lys Val Thr Ala Asp Met Val Lys Glu Ala Leu Glu  
1585 1590 1595 1600

Glu Ala Glu Lys Ala Gln Val Ala Ala Glu Lys Ala Ile Lys Gln Ala  
1605 1610 1615

Asp Glu Asp Ile Gln Gly Thr Gln Asn Leu Leu Thr Ser Ile Glu Ser  
1620 1625 1630

Glu Thr Ala Ala Ser Glu Glu Thr Leu Thr Asn Ala Ser Gln Arg Ile  
1635 1640 1645

Ser Lys Leu Glu Arg Asn Val Glu Glu Leu Lys Arg Lys Ala Ala Gln  
1650 1655 1660

Asn Ser Gly Glu Ala Glu Tyr Ile Glu Lys Val Val Tyr Ser Val Lys  
1665 1670 1675 1680

Gln Asn Ala Asp Asp Val Lys Lys Thr Leu Asp Gly Glu Leu Asp Glu  
1685 1690 1695

Lys Tyr Lys Lys Val Glu Ser Leu Ile Ala Gln Lys Thr Glu Glu Ser  
1700 1705 1710

Ala Asp Ala Arg Arg Lys Ala Glu Leu Leu Gln Asn Glu Ala Lys Thr  
1715 1720 1725

Leu Leu Ala Gln Ala Asn Ser Lys Leu Gln Leu Leu Glu Asp Leu Glu  
1730 1735 1740

Arg Lys Tyr Glu Asp Asn Gln Lys Tyr Leu Glu Asp Lys Ala Gln Glu  
1745 1750 1755 1760

Leu Val Arg Leu Glu Gly Glu Val Arg Ser Leu Leu Lys Asp Ile Ser  
1765 1770 1775

Glu Lys Val Ala Val Tyr Ser Thr Cys Leu  
1780 1785

<210> 11  
<211> 5329  
<212> DNA  
<213> Mus musculus

<220>  
<221> CDS  
<222> (1)..(5175)

<400> 11  
gag ccc tac tgt att gtt agc cac ctg cag gag gac aag aaa tgc ttc 48

Glu	Pro	Tyr	Cys	Ile	Val	Ser	His	Leu	Gln	Glu	Asp	Lys	Lys	Cys	Phe		
1				5					10						15		
ata	tgt	gac	tcc	cga	gac	cct	tat	cac	gag	acc	ctc	aac	ccc	gac	agc	96	
Ile	Cys	Asp	Ser	Arg	Asp	Pro	Tyr	His	Glu	Thr	Leu	Asn	Pro	Asp	Ser		
			20					25					30				
cat	ctc	att	gag	aac	gtg	gtc	acc	aca	ttt	gct	cca	aac	cgc	ctt	aag	144	
His	Leu	Ile	Glu	Asn	Val	Val	Thr	Thr	Phe	Ala	Pro	Asn	Arg	Leu	Lys		
		35					40					45					
atc	tgg	tgg	caa	tcg	gaa	aat	ggg	gtg	gag	aac	gtg	acc	atc	caa	ctg	192	
Ile	Trp	Trp	Gln	Ser	Glu	Asn	Gly	Val	Glu	Asn	Val	Thr	Ile	Gln	Leu		
	50					55					60						
gac	ctg	gaa	gca	gaa	ttc	cat	ttc	act	cat	ctc	atc	atg	acc	ttc	aag	240	
Asp	Leu	Glu	Ala	Glu	Phe	His	Phe	Thr	His	Leu	Ile	Met	Thr	Phe	Lys		
65					70				75						80		
aca	ttc	cgc	cca	gcc	gcc	atg	ctg	atc	gag	cgg	tct	tct	gac	ttt	ggg	288	
Thr	Phe	Arg	Pro	Ala	Ala	Met	Leu	Ile	Glu	Arg	Ser	Ser	Asp	Phe	Gly		
				85					90					95			
aag	act	tgg	ggc	gtg	tac	aga	tac	ttc	gcc	tac	gac	tgt	gag	agc	tcg	336	
Lys	Thr	Trp	Gly	Val	Tyr	Arg	Tyr	Phe	Ala	Tyr	Asp	Cys	Glu	Ser	Ser		
			100					105					110				
ttc	cca	ggc	att	tca	act	gga	ccc	atg	aag	aaa	gtg	gat	gac	atc	atc	384	
Phe	Pro	Gly	Ile	Ser	Thr	Gly	Pro	Met	Lys	Lys	Val	Asp	Asp	Ile	Ile		
		115					120					125					
tgt	gac	tct	cga	tat	tct	gac	att	gag	ccc	tcg	aca	gaa	gga	gag	gta	432	
Cys	Asp	Ser	Arg	Tyr	Ser	Asp	Ile	Glu	Pro	Ser	Thr	Glu	Gly	Glu	Val		
	130					135					140						
ata	ttt	cgt	gct	tta	gat	cct	gct	ttc	aaa	att	gaa	gac	cct	tat	agt	480	
Ile	Phe	Arg	Ala	Leu	Asp	Pro	Ala	Phe	Lys	Ile	Glu	Asp	Pro	Tyr	Ser		
145					150					155					160		
cca	agg	ata	cag	aat	cta	tta	aaa	atc	acc	aac	ttg	aga	atc	aag	ttt	528	
Pro	Arg	Ile	Gln	Asn	Leu	Leu	Lys	Ile	Thr	Asn	Leu	Arg	Ile	Lys	Phe		
				165					170					175			
gtg	aaa	ctg	cac	acc	ttg	ggg	gat	aac	ctt	ttg	gac	tcc	aga	atg	gaa	576	
Val	Lys	Leu	His	Thr	Leu	Gly	Asp	Asn	Leu	Leu	Asp	Ser	Arg	Met	Glu		
			180					185					190				
atc	cga	gag	aag	tac	tat	tac	gct	gtt	tat	gat	atg	gtg	gtt	cga	ggg	624	
Ile	Arg	Glu	Lys	Tyr	Tyr	Tyr	Ala	Val	Tyr	Asp	Met	Val	Val	Arg	Gly		
		195					200						205				
aac	tgc	ttc	tgc	tat	ggc	cac	gcc	agt	gaa	tgc	gcc	cct	gtg	gat	gga	672	
Asn	Cys	Phe	Cys	Tyr	Gly	His	Ala	Ser	Glu	Cys	Ala	Pro	Val	Asp	Gly		
	210					215					220						
gtc	aat	gaa	gaa	gtg	gaa	gga	atg	gtt	cac	ggg	cac	tgc	atg	tgc	aga	720	
Val	Asn	Glu	Glu	Val	Glu	Gly	Met	Val	His	Gly	His	Cys	Met	Cys	Arg		
225					230					235					240		
cac	aac	acc	aaa	ggc	ctg	aac	tgt	gag	ctg	tgc	atg	gat	ttc	tac	cac	768	
His	Asn	Thr	Lys	Gly	Leu	Asn	Cys	Glu	Leu	Cys	Met	Asp	Phe	Tyr	His		

245										250										255										
gat	ttg	ccg	tgg	aga	cct	gct	gaa	ggc	cgg	aac	agc	aac	gcc	tgc	aaa	816														
Asp	Leu	Pro	Trp	Arg	Pro	Ala	Glu	Gly	Arg	Asn	Ser	Asn	Ala	Cys	Lys															
			260					265					270																	
aaa	tgt	aac	tgc	aat	gaa	cat	tcc	agc	tcg	tgt	cac	ttt	gac	atg	gca	864														
Lys	Cys	Asn	Cys	Asn	Glu	His	Ser	Ser	Ser	Cys	His	Phe	Asp	Met	Ala															
		275					280					285																		
gtc	ttc	ctg	gct	act	ggc	aac	gtc	agc	ggg	gga	gtg	tgt	gat	aac	tgt	912														
Val	Phe	Leu	Ala	Thr	Gly	Asn	Val	Ser	Gly	Gly	Val	Cys	Asp	Asn	Cys															
		290				295					300																			
cag	cac	aac	acc	atg	ggg	cgc	aac	tgt	gaa	cag	tgc	aaa	ccg	ttc	tac	960														
Gln	His	Asn	Thr	Met	Gly	Arg	Asn	Cys	Glu	Gln	Cys	Lys	Pro	Phe	Tyr															
305					310				315						320															
ttc	cag	cac	cct	gag	agg	gac	atc	cgg	gac	ccc	aat	ctc	tgt	gaa	cca	1008														
Phe	Gln	His	Pro	Glu	Arg	Asp	Ile	Arg	Asp	Pro	Asn	Leu	Cys	Glu	Pro															
			325					330					335																	
tgt	acc	tgt	gac	cca	gct	ggg	tct	gag	aac	ggc	ggg	atc	tgt	gat	ggg	1056														
Cys	Thr	Cys	Asp	Pro	Ala	Gly	Ser	Glu	Asn	Gly	Gly	Ile	Cys	Asp	Gly															
			340					345					350																	
tac	act	gat	ttt	tct	gtg	ggg	ctc	att	gct	ggg	cag	tgt	cgg	tgc	aaa	1104														
Tyr	Thr	Asp	Phe	Ser	Val	Gly	Leu	Ile	Ala	Gly	Gln	Cys	Arg	Cys	Lys															
		355				360					365																			
ttg	cac	gtg	gag	gga	gag	cgc	tgt	gat	gtt	tgt	aaa	gaa	ggc	ttc	tac	1152														
Leu	His	Val	Glu	Gly	Glu	Arg	Cys	Asp	Val	Cys	Lys	Glu	Gly	Phe	Tyr															
		370				375					380																			
gac	tta	agt	gct	gaa	gac	ccg	tat	ggg	tgt	aaa	tca	tgt	gct	tgc	aat	1200														
Asp	Leu	Ser	Ala	Glu	Asp	Pro	Tyr	Gly	Cys	Lys	Ser	Cys	Ala	Cys	Asn															
385					390					395					400															
cct	ctg	gga	aca	att	cct	ggg	ggg	aat	cct	tgt	gat	tct	gag	act	ggc	1248														
Pro	Leu	Gly	Thr	Ile	Pro	Gly	Gly	Asn	Pro	Cys	Asp	Ser	Glu	Thr	Gly															
			405					410					415																	
tac	tgc	tac	tgt	aag	cgc	ctg	gtg	aca	gga	cag	cgc	tgt	gac	cag	tgc	1296														
Tyr	Cys	Tyr	Cys	Lys	Arg	Leu	Val	Thr	Gly	Gln	Arg	Cys	Asp	Gln	Cys															
			420					425					430																	
ctg	ccg	cag	cac	tgg	ggg	tta	agc	aat	gat	ttg	gat	ggg	tgt	cga	cct	1344														
Leu	Pro	Gln	His	Trp	Gly	Leu	Ser	Asn	Asp	Leu	Asp	Gly	Cys	Arg	Pro															
		435				440						445																		
tgt	gac	tgt	gac	ctt	gga	ggg	gcg	ctg	aac	aat	agc	tgc	tcc	gag	gac	1392														
Cys	Asp	Cys	Asp	Leu	Gly	Gly	Ala	Leu	Asn	Asn	Ser	Cys	Ser	Glu	Asp															
		450				455					460																			
tcc	ggc	cag	tgc	tcc	tgc	ctg	ccc	cac	atg	att	ggg	cgg	cag	tgt	aac	1440														
Ser	Gly	Gln	Cys	Ser	Cys	Leu	Pro	His	Met	Ile	Gly	Arg	Gln	Cys	Asn															
465					470					475					480															
gag	gtg	gag	tcc	ggg	tac	tac	ttc	acc	acc	ctg	gac	cac	tac	atc	tac	1488														
Glu	Val	Glu	Ser	Gly	Tyr	Tyr	Phe	Thr	Thr	Leu	Asp	His	Tyr	Ile	Tyr															
			485					490						495																



gaa gcc gag gaa gcc aat ctg ggg cct gga gtc gtt gtg gtg gaa agg	1536
Glu Ala Glu Glu Ala Asn Leu Gly Pro Gly Val Val Val Val Glu Arg	
500 505 510	
cag tac att cag gac cgc att cct tcc tgg aca gga cct ggc ttc gtc	1584
Gln Tyr Ile Gln Asp Arg Ile Pro Ser Trp Thr Gly Pro Gly Phe Val	
515 520 525	
cgg gtg cct gaa ggg gct tat ttg gag ttt ttc att gac aac ata cca	1632
Arg Val Pro Glu Gly Ala Tyr Leu Glu Phe Phe Ile Asp Asn Ile Pro	
530 535 540	
tat tcc atg gag tat gaa atc ctg att cgc tat gag cca cag ctg ccg	1680
Tyr Ser Met Glu Tyr Glu Ile Leu Ile Arg Tyr Glu Pro Gln Leu Pro	
545 550 555 560	
gac cac tgg gag aaa gct gtc atc act gta cag cgg ccg ggg aag att	1728
Asp His Trp Glu Lys Ala Val Ile Thr Val Gln Arg Pro Gly Lys Ile	
565 570 575	
cca gcc agc agc cga tgt ggt aac acc gtt ccc gat gat gac aac cag	1776
Pro Ala Ser Ser Arg Cys Gly Asn Thr Val Pro Asp Asp Asp Asn Gln	
580 585 590	
gtg gtg tcc ttg tca ccg ggc tca aga tac gtt gtc ctc cct cgc ccc	1824
Val Val Ser Leu Ser Pro Gly Ser Arg Tyr Val Val Leu Pro Arg Pro	
595 600 605	
gtg tgc ttt gag aag gga atg aac tac acg gtg agg ttg gag ctg ccc	1872
Val Cys Phe Glu Lys Gly Met Asn Tyr Thr Val Arg Leu Glu Leu Pro	
610 615 620	
cag tat acg gca tcg ggc agt gac gtg gag agc cct tac acg ttc atc	1920
Gln Tyr Thr Ala Ser Gly Ser Asp Val Glu Ser Pro Tyr Thr Phe Ile	
625 630 635 640	
gac tcg ctt gtt ctc atg ccc tac tgt aaa tcg ctg gac atc ttc act	1968
Asp Ser Leu Val Leu Met Pro Tyr Cys Lys Ser Leu Asp Ile Phe Thr	
645 650 655	
gtt ggc ggc tca ggc gat ggg gag gtc acc aat agt gcc tgg gaa acc	2016
Val Gly Gly Ser Gly Asp Gly Glu Val Thr Asn Ser Ala Trp Glu Thr	
660 665 670	
ttc cag cgc tac agg tgt ctg gag aac agc agg agt gtg gta aaa aca	2064
Phe Gln Arg Tyr Arg Cys Leu Glu Asn Ser Arg Ser Val Val Lys Thr	
675 680 685	
ccc atg aca gat gtc tgc aga aac att atc ttc agc att tct gcc ttg	2112
Pro Met Thr Asp Val Cys Arg Asn Ile Ile Phe Ser Ile Ser Ala Leu	
690 695 700	
att cac cag acg ggc ctt gct tgt gaa tgt gac ccc cag gga tct ctg	2160
Ile His Gln Thr Gly Leu Ala Cys Glu Cys Asp Pro Gln Gly Ser Leu	
705 710 715 720	
agt tct gtg tgt gac ccc aat ggt ggc cag tgc cag tgc cgt cct aat	2208
Ser Ser Val Cys Asp Pro Asn Gly Gly Gln Cys Gln Cys Arg Pro Asn	
725 730 735	

gtg gtt gga aga acc tgc aac agg tgt gcc ccg ggc acc ttt ggc ttt	2256
Val Val Gly Arg Thr Cys Asn Arg Cys Ala Pro Gly Thr Phe Gly Phe	
740 745 750	
ggc ccc aac gga tgc aaa cct tgt gac tgc cat ctg caa ggg tct gcc	2304
Gly Pro Asn Gly Cys Lys Pro Cys Asp Cys His Leu Gln Gly Ser Ala	
755 760 765	
agt gcc ttc tgc gat gcg atc act ggc cag tgc cac tgt ttc cag ggc	2352
Ser Ala Phe Cys Asp Ala Ile Thr Gly Gln Cys His Cys Phe Gln Gly	
770 775 780	
atc tat gct cgg cag tgt gac cga tgt ctc cct ggg tat tgg ggc ttt	2400
Ile Tyr Ala Arg Gln Cys Asp Arg Cys Leu Pro Gly Tyr Trp Gly Phe	
785 790 795 800	
ccc agc tgc cag ccc tgc cag tgt aat ggt cat gct cta gac tgt gac	2448
Pro Ser Cys Gln Pro Cys Gln Cys Asn Gly His Ala Leu Asp Cys Asp	
805 810 815	
aca gtg aca ggg gag tgt ctg agc tgt cag gac tac acc acg ggc cac	2496
Thr Val Thr Gly Glu Cys Leu Ser Cys Gln Asp Tyr Thr Thr Gly His	
820 825 830	
aac tgc gaa agg tgc ctg gct ggc tac tac ggt gat ccc atc att ggg	2544
Asn Cys Glu Arg Cys Leu Ala Gly Tyr Tyr Gly Asp Pro Ile Ile Gly	
835 840 845	
tca gga gac cac tgt cgc cct tgc cct tgt cct gat ggt cct gac agt	2592
Ser Gly Asp His Cys Arg Pro Cys Pro Cys Pro Gly Pro Asp Ser	
850 855 860	
gga cga cag ttt gcc agg agc tgt tat caa gac ccc gtc act ctc cag	2640
Gly Arg Gln Phe Ala Arg Ser Cys Tyr Gln Asp Pro Val Thr Leu Gln	
865 870 875 880	
ctt gcg tgt gtt tgt gat cct ggg tac att ggc tcc aga tgt gat gac	2688
Leu Ala Cys Val Cys Asp Pro Gly Tyr Ile Gly Ser Arg Cys Asp Asp	
885 890 895	
tgt gcc tct gga ttt ttt ggc aat ccc tca gac ttt ggg ggt tca tgt	2736
Cys Ala Ser Gly Phe Phe Gly Asn Pro Ser Asp Phe Gly Ser Cys	
900 905 910	
caa ccg tgt cag tgc cac cac aac att gac act acc gat cca gaa gcc	2784
Gln Pro Cys Gln Cys His His Asn Ile Asp Thr Thr Asp Pro Glu Ala	
915 920 925	
tgt gac aag gac acg gga cga tgc ctc aag tgc ctg tac cac acg gaa	2832
Cys Asp Lys Asp Thr Gly Arg Cys Leu Lys Cys Leu Tyr His Thr Glu	
930 935 940	
ggg gac cat tgc cag ctc tgc cag tat ggg tac tac ggc gat gct ctt	2880
Gly Asp His Cys Gln Leu Cys Gln Tyr Gly Tyr Gly Asp Ala Leu	
945 950 955 960	
cgg caa gac tgt aga aag tgt gtc tgc aat tac ctg ggc acg gtg aag	2928
Arg Gln Asp Cys Arg Lys Cys Val Cys Asn Tyr Leu Gly Thr Val Lys	
965 970 975	
gaa cat tgt aat ggc tct gac tgc cac tgt gac aaa gcc act ggt cag	2976

Glu His Cys Asn Gly Ser Asp Cys His Cys Asp Lys Ala Thr Gly Gln	
980 985 990	
tgc tcg tgc ctt ccc aat gtg atc ggg cag aac tgt gac cgg tgt gcg	3024
Cys Ser Cys Leu Pro Asn Val Ile Gly Gln Asn Cys Asp Arg Cys Ala	
995 1000 1005	
ccc aac acc tgg cag ctg gct agc ggg act ggc tgc ggg ccc tgc aat	3072
Pro Asn Thr Trp Gln Leu Ala Ser Gly Thr Gly Cys Gly Pro Cys Asn	
1010 1015 1020	
tgc aat gct gcg cat tcc ttt ggg cca tcc tgc aac gag ttc aca ggg	3120
Cys Asn Ala Ala His Ser Phe Gly Pro Ser Cys Asn Glu Phe Thr Gly	
1025 1030 1035 1040	
cag tgc cag tgc atg ccg ggc ttt gga ggc cga acc tgc agc gag tgc	3168
Gln Cys Gln Cys Met Pro Gly Phe Gly Arg Thr Cys Ser Glu Cys	
1045 1050 1055	
cag gag ctc ttc tgg gga gac cct gat gtg gaa tgc cga gcc tgt gac	3216
Gln Glu Leu Phe Trp Gly Asp Pro Asp Val Glu Cys Arg Ala Cys Asp	
1060 1065 1070	
tgt gat ccc agg ggc att gag aca cct cag tgt gac cag tcc acg ggc	3264
Cys Asp Pro Arg Gly Ile Glu Thr Pro Gln Cys Asp Gln Ser Thr Gly	
1075 1080 1085	
cag tgt gtc tgt gtg gag ggt gta gag ggt cct cgc tgc gac aag tgc	3312
Gln Cys Val Cys Val Glu Gly Val Glu Gly Pro Arg Cys Asp Lys Cys	
1090 1095 1100	
acc aga ggt tac tcg ggg gtc ttt cct gac tgc aca ccc tgc cac cag	3360
Thr Arg Gly Tyr Ser Gly Val Phe Pro Asp Cys Thr Pro Cys His Gln	
1105 1110 1115 1120	
tgc ttt gct ctc tgg gat gct atc att ggt gag ctg acc aac agg acc	3408
Cys Phe Ala Leu Trp Asp Ala Ile Ile Gly Glu Leu Thr Asn Arg Thr	
1125 1130 1135	
cac aaa ttc ctg gag aaa gcc aag gct ctg aaa atc agt ggt gtg att	3456
His Lys Phe Leu Glu Lys Ala Lys Ala Leu Lys Ile Ser Gly Val Ile	
1140 1145 1150	
ggt ccc tac cga gag acc gtg gac tct gta gag aag aaa gtc aat gag	3504
Gly Pro Tyr Arg Glu Thr Val Asp Ser Val Glu Lys Lys Val Asn Glu	
1155 1160 1165	
ata aaa gac atc ctg gcc cag agc cca gca gcg gaa cca ctg aaa aac	3552
Ile Lys Asp Ile Leu Ala Gln Ser Pro Ala Ala Glu Pro Leu Lys Asn	
1170 1175 1180	
att ggc att ctc ttc gag gag gca gag aaa cta acc aaa gat gtc aca	3600
Ile Gly Ile Leu Phe Glu Glu Ala Glu Lys Leu Thr Lys Asp Val Thr	
1185 1190 1195 1200	
gaa aag atg gcg cag gta gaa gtg aaa tta act gat aca gct tca cag	3648
Glu Lys Met Ala Gln Val Glu Val Lys Leu Thr Asp Thr Ala Ser Gln	
1205 1210 1215	
agt aac agc aca gct gga gag ctc ggc gca ctg cag gca gaa gca gag	3696
Ser Asn Ser Thr Ala Gly Glu Leu Gly Ala Leu Gln Ala Glu Ala Glu	

1220	1225	1230	
agc ctt gac aag acc gtg aag gag ctg gca gaa cag ctg gag ttt atc Ser Leu Asp Lys Thr Val Lys Glu Leu Ala Glu Gln Leu Glu Phe Ile 1235 1240 1245			3744
aaa aac tcc gat att cag ggc gcc ttg gat agc atc acc aag tat ttc Lys Asn Ser Asp Ile Gln Gly Ala Leu Asp Ser Ile Thr Lys Tyr Phe 1250 1255 1260			3792
cag atg tct ctt gag gca gag aag cgg gtg aat gcc tcc acc aca gac Gln Met Ser Leu Glu Ala Glu Lys Arg Val Asn Ala Ser Thr Thr Asp 1265 1270 1275 1280			3840
ccc aac agc act gtg gag cag tct gcc ctc acg cga gac aga gta gaa Pro Asn Ser Thr Val Glu Gln Ser Ala Leu Thr Arg Asp Arg Val Glu 1285 1290 1295			3888
gat ctg atg ttg gag cga gag tct ccg ttc aag gag cag cag gag gaa Asp Leu Met Leu Glu Arg Glu Ser Pro Phe Lys Glu Gln Gln Glu Glu 1300 1305 1310			3936
cag gca cgc ctc ctg gac gaa ctg gcc ggc aaa ctg caa agt ctc gac Gln Ala Arg Leu Leu Asp Glu Leu Ala Gly Lys Leu Gln Ser Leu Asp 1315 1320 1325			3984
ctg tcg gct gct gca cag atg acc tgt gga aca cct cca ggg gct gac Leu Ser Ala Ala Ala Gln Met Thr Cys Gly Thr Pro Pro Gly Ala Asp 1330 1335 1340			4032
tgt tct gaa agt gaa tgt ggt ggc ccc aac tgc aga act gac gaa gga Cys Ser Glu Ser Glu Cys Gly Gly Pro Asn Cys Arg Thr Asp Glu Gly 1345 1350 1355 1360			4080
gag aag aag tgt ggg ggg cct ggc tgt ggt ggt ctg gtc act gtg gcc Glu Lys Lys Cys Gly Pro Gly Cys Gly Leu Val Thr Val Ala 1365 1370 1375			4128
cac agt gct tgg cag aaa gcc atg gat ttt gac cgt gat gtc ctg agt His Ser Ala Trp Gln Lys Ala Met Asp Phe Asp Arg Asp Val Leu Ser 1380 1385 1390			4176
gcc ctg gct gaa gtc gaa cag ctc tcc aag atg gtc tct gaa gca aaa Ala Leu Ala Glu Val Glu Gln Leu Ser Lys Met Val Ser Glu Ala Lys 1395 1400 1405			4224
gtg aga gca gat gag gcg aag cag aat gcg cag gat gtc ctg tta aaa Val Arg Ala Asp Glu Ala Lys Gln Asn Ala Gln Asp Val Leu Leu Lys 1410 1415 1420			4272
aca aat gct acc aaa gaa aaa gtg gac aag agc aac gag gac ctg cgg Thr Asn Ala Thr Lys Glu Lys Val Asp Lys Ser Asn Glu Asp Leu Arg 1425 1430 1435 1440			4320
aac ctc atc aag cag atc aga aac ttc ctg act gag gat agt gct gat Asn Leu Ile Lys Gln Ile Arg Asn Phe Leu Thr Glu Asp Ser Ala Asp 1445 1450 1455			4368
cta gac agt att gaa gca gtt gct aat gaa gta ctg aaa agt gga aat Leu Asp Ser Ile Glu Ala Val Ala Asn Glu Val Leu Lys Ser Gly Asn 1460 1465 1470			4416

gct agc acg cca cag cag tta cag aac cta aca gaa gac att cgg gag Ala Ser Thr Pro Gln Gln Leu Gln Asn Leu Thr Glu Asp Ile Arg Glu 1475 1480 1485	4464
cga gtt gaa acc ctc tct caa gta gag gtt att ttg cag cag agt gca Arg Val Glu Thr Leu Ser Gln Val Glu Val Ile Leu Gln Gln Ser Ala 1490 1495 1500	4512
gct gac att gcc aga gct gag ctg ttg ctt gag gaa gct aag aga gca Ala Asp Ile Ala Arg Ala Glu Leu Leu Leu Glu Glu Ala Lys Arg Ala 1505 1510 1515 1520	4560
agc aaa agt gca aca gat gtt aaa gtc act gca gac atg gtg aag gaa Ser Lys Ser Ala Thr Asp Val Lys Val Thr Ala Asp Met Val Lys Glu 1525 1530 1535	4608
gca tta gaa gaa gca gaa aag gcc cag gtt gca gca gag aag gcg att Ala Leu Glu Glu Ala Glu Lys Ala Gln Val Ala Ala Glu Lys Ala Ile 1540 1545 1550	4656
aaa caa gct gat gag gat atc caa gga acc caa aac ctg cta aca tcg Lys Gln Ala Asp Glu Asp Ile Gln Gly Thr Gln Asn Leu Leu Thr Ser 1555 1560 1565	4704
att gaa tct gaa acg gca gct tct gag gaa acc ctg acc aac gcc tcc Ile Glu Ser Glu Thr Ala Ala Ser Glu Glu Thr Leu Thr Asn Ala Ser 1570 1575 1580	4752
cag cgc atc agc aag ctt gag agg aac gtg gaa gag ctt aag cgt aaa Gln Arg Ile Ser Lys Leu Glu Arg Asn Val Glu Glu Leu Lys Arg Lys 1585 1590 1595 1600	4800
gct gcc cag aac tct ggg gag gca gaa tat atc gaa aaa gta gta tat Ala Ala Gln Asn Ser Gly Glu Ala Glu Tyr Ile Glu Lys Val Val Tyr 1605 1610 1615	4848
tct gta aaa cag aat gca gac gat gtt aaa aag act cta gat ggc gaa Ser Val Lys Gln Asn Ala Asp Asp Val Lys Lys Thr Leu Asp Gly Glu 1620 1625 1630	4896
ctt gat gaa aag tat aag aag gta gaa agt tta att gcc caa aaa act Leu Asp Glu Lys Tyr Lys Lys Val Glu Ser Leu Ile Ala Gln Lys Thr 1635 1640 1645	4944
gaa gag tca gca gat gcc agg agg aaa gct gag ctg cta caa aat gaa Glu Glu Ser Ala Asp Ala Arg Lys Ala Glu Leu Leu Gln Asn Glu 1650 1655 1660	4992
gca aaa aca ctc ttg gct caa gct aac agc aag ctc cag ctg ttg gaa Ala Lys Thr Leu Leu Ala Gln Ala Asn Ser Lys Leu Gln Leu Leu Glu 1665 1670 1675 1680	5040
gac tta gaa aga aaa tat gag gac aat caa aaa tac tta gaa gat aaa Asp Leu Glu Arg Lys Tyr Glu Asp Asn Gln Lys Tyr Leu Glu Asp Lys 1685 1690 1695	5088
gct caa gaa ttg gtg cga ctg gaa gga gag gtt cgc tcc ctc ctt aag Ala Gln Glu Leu Val Arg Leu Glu Gly Glu Val Arg Ser Leu Leu Lys 1700 1705 1710	5136

gac ata agt gag aaa gtt gcg gtt tac agc acc tgc tta taacaggaag 5185  
 Asp Ile Ser Glu Lys Val Ala Val Tyr Ser Thr Cys Leu  
           1715                          1720                          1725

gggctgtaga ggggctcggg gaccaaggta aaccacacgc gcaaaccgag gcagtcacatc 5245

acaaataaacc catcatctat ttaatgtttt taaccaccta cttttgtatg gagttaaata 5305

aaagacattg gttttgtata aaca 5329

<210> 12

<211> 1725

<212> PRT

<213> Mus musculus

<400> 12

Glu Pro Tyr Cys Ile Val Ser His Leu Gln Glu Asp Lys Lys Cys Phe  
       1                          5                          10                          15

Ile Cys Asp Ser Arg Asp Pro Tyr His Glu Thr Leu Asn Pro Asp Ser  
                           20                          25                          30

His Leu Ile Glu Asn Val Val Thr Thr Phe Ala Pro Asn Arg Leu Lys  
                           35                          40                          45

Ile Trp Trp Gln Ser Glu Asn Gly Val Glu Asn Val Thr Ile Gln Leu  
           50                          55                          60

Asp Leu Glu Ala Glu Phe His Phe Thr His Leu Ile Met Thr Phe Lys  
       65                          70                          75                          80

Thr Phe Arg Pro Ala Ala Met Leu Ile Glu Arg Ser Ser Asp Phe Gly  
                           85                          90                          95

Lys Thr Trp Gly Val Tyr Arg Tyr Phe Ala Tyr Asp Cys Glu Ser Ser  
           100                          105                          110

Phe Pro Gly Ile Ser Thr Gly Pro Met Lys Lys Val Asp Asp Ile Ile  
           115                          120                          125

Cys Asp Ser Arg Tyr Ser Asp Ile Glu Pro Ser Thr Glu Gly Glu Val  
       130                          135                          140

Ile Phe Arg Ala Leu Asp Pro Ala Phe Lys Ile Glu Asp Pro Tyr Ser  
       145                          150                          155                          160

Pro Arg Ile Gln Asn Leu Leu Lys Ile Thr Asn Leu Arg Ile Lys Phe  
                           165                          170                          175

Val Lys Leu His Thr Leu Gly Asp Asn Leu Leu Asp Ser Arg Met Glu  
                           180                          185                          190

Ile Arg Glu Lys Tyr Tyr Tyr Ala Val Tyr Asp Met Val Val Arg Gly  
           195                          200                          205

Asn Cys Phe Cys Tyr Gly His Ala Ser Glu Cys Ala Pro Val Asp Gly  
       210                          215                          220

Val Asn Glu Glu Val Glu Gly Met Val His Gly His Cys Met Cys Arg  
       225                          230                          235                          240

His	Asn	Thr	Lys	Gly	Leu	Asn	Cys	Glu	Leu	Cys	Met	Asp	Phe	Tyr	His	
				245					250						255	
Asp	Leu	Pro	Trp	Arg	Pro	Ala	Glu	Gly	Arg	Asn	Ser	Asn	Ala	Cys	Lys	
			260					265					270			
Lys	Cys	Asn	Cys	Asn	Glu	His	Ser	Ser	Ser	Cys	His	Phe	Asp	Met	Ala	
		275					280					285				
Val	Phe	Leu	Ala	Thr	Gly	Asn	Val	Ser	Gly	Gly	Val	Cys	Asp	Asn	Cys	
	290					295					300					
Gln	His	Asn	Thr	Met	Gly	Arg	Asn	Cys	Glu	Gln	Cys	Lys	Pro	Phe	Tyr	
305					310					315					320	
Phe	Gln	His	Pro	Glu	Arg	Asp	Ile	Arg	Asp	Pro	Asn	Leu	Cys	Glu	Pro	
				325				330						335		
Cys	Thr	Cys	Asp	Pro	Ala	Gly	Ser	Glu	Asn	Gly	Gly	Ile	Cys	Asp	Gly	
			340					345					350			
Tyr	Thr	Asp	Phe	Ser	Val	Gly	Leu	Ile	Ala	Gly	Gln	Cys	Arg	Cys	Lys	
		355					360					365				
Leu	His	Val	Glu	Gly	Glu	Arg	Cys	Asp	Val	Cys	Lys	Glu	Gly	Phe	Tyr	
	370					375					380					
Asp	Leu	Ser	Ala	Glu	Asp	Pro	Tyr	Gly	Cys	Lys	Ser	Cys	Ala	Cys	Asn	
385					390					395					400	
Pro	Leu	Gly	Thr	Ile	Pro	Gly	Gly	Asn	Pro	Cys	Asp	Ser	Glu	Thr	Gly	
				405				410						415		
Tyr	Cys	Tyr	Cys	Lys	Arg	Leu	Val	Thr	Gly	Gln	Arg	Cys	Asp	Gln	Cys	
			420					425					430			
Leu	Pro	Gln	His	Trp	Gly	Leu	Ser	Asn	Asp	Leu	Asp	Gly	Cys	Arg	Pro	
		435					440					445				
Cys	Asp	Cys	Asp	Leu	Gly	Gly	Ala	Leu	Asn	Asn	Ser	Cys	Ser	Glu	Asp	
	450					455					460					
Ser	Gly	Gln	Cys	Ser	Cys	Leu	Pro	His	Met	Ile	Gly	Arg	Gln	Cys	Asn	
465					470					475					480	
Glu	Val	Glu	Ser	Gly	Tyr	Tyr	Phe	Thr	Thr	Leu	Asp	His	Tyr	Ile	Tyr	
				485					490					495		
Glu	Ala	Glu	Glu	Ala	Asn	Leu	Gly	Pro	Gly	Val	Val	Val	Val	Glu	Arg	
			500					505					510			
Gln	Tyr	Ile	Gln	Asp	Arg	Ile	Pro	Ser	Trp	Thr	Gly	Pro	Gly	Phe	Val	
		515					520					525				
Arg	Val	Pro	Glu	Gly	Ala	Tyr	Leu	Glu	Phe	Phe	Ile	Asp	Asn	Ile	Pro	
	530					535					540					
Tyr	Ser	Met	Glu	Tyr	Glu	Ile	Leu	Ile	Arg	Tyr	Glu	Pro	Gln	Leu	Pro	
545					550					555					560	

Asp	His	Trp	Glu	Lys	Ala	Val	Ile	Thr	Val	Gln	Arg	Pro	Gly	Lys	Ile		
				565					570					575			
Pro	Ala	Ser	Ser	Arg	Cys	Gly	Asn	Thr	Val	Pro	Asp	Asp	Asp	Asn	Gln		
				580				585					590				
Val	Val	Ser	Leu	Ser	Pro	Gly	Ser	Arg	Tyr	Val	Val	Leu	Pro	Arg	Pro		
				595				600					605				
Val	Cys	Phe	Glu	Lys	Gly	Met	Asn	Tyr	Thr	Val	Arg	Leu	Glu	Leu	Pro		
						615					620						
Gln	Tyr	Thr	Ala	Ser	Gly	Ser	Asp	Val	Glu	Ser	Pro	Tyr	Thr	Phe	Ile		
					630					635					640		
Asp	Ser	Leu	Val	Leu	Met	Pro	Tyr	Cys	Lys	Ser	Leu	Asp	Ile	Phe	Thr		
				645					650					655			
Val	Gly	Gly	Ser	Gly	Asp	Gly	Glu	Val	Thr	Asn	Ser	Ala	Trp	Glu	Thr		
				660				665						670			
Phe	Gln	Arg	Tyr	Arg	Cys	Leu	Glu	Asn	Ser	Arg	Ser	Val	Val	Lys	Thr		
				675				680					685				
Pro	Met	Thr	Asp	Val	Cys	Arg	Asn	Ile	Ile	Phe	Ser	Ile	Ser	Ala	Leu		
						695					700						
Ile	His	Gln	Thr	Gly	Leu	Ala	Cys	Glu	Cys	Asp	Pro	Gln	Gly	Ser	Leu		
					710					715					720		
Ser	Ser	Val	Cys	Asp	Pro	Asn	Gly	Gly	Gln	Cys	Gln	Cys	Arg	Pro	Asn		
				725					730					735			
Val	Val	Gly	Arg	Thr	Cys	Asn	Arg	Cys	Ala	Pro	Gly	Thr	Phe	Gly	Phe		
				740				745					750				
Gly	Pro	Asn	Gly	Cys	Lys	Pro	Cys	Asp	Cys	His	Leu	Gln	Gly	Ser	Ala		
				755				760				765					
Ser	Ala	Phe	Cys	Asp	Ala	Ile	Thr	Gly	Gln	Cys	His	Cys	Phe	Gln	Gly		
						775				780							
Ile	Tyr	Ala	Arg	Gln	Cys	Asp	Arg	Cys	Leu	Pro	Gly	Tyr	Trp	Gly	Phe		
					790					795					800		
Pro	Ser	Cys	Gln	Pro	Cys	Gln	Cys	Asn	Gly	His	Ala	Leu	Asp	Cys	Asp		
				805					810					815			
Thr	Val	Thr	Gly	Glu	Cys	Leu	Ser	Cys	Gln	Asp	Tyr	Thr	Thr	Gly	His		
				820				825						830			
Asn	Cys	Glu	Arg	Cys	Leu	Ala	Gly	Tyr	Tyr	Gly	Asp	Pro	Ile	Ile	Gly		
				835				840				845					
Ser	Gly	Asp	His	Cys	Arg	Pro	Cys	Pro	Cys	Pro	Asp	Gly	Pro	Asp	Ser		
						855					860						
Gly	Arg	Gln	Phe	Ala	Arg	Ser	Cys	Tyr	Gln	Asp	Pro	Val	Thr	Leu	Gln		
					870					875					880		
Leu	Ala	Cys	Val	Cys	Asp	Pro	Gly	Tyr	Ile	Gly	Ser	Arg	Cys	Asp	Asp		



885										890					895					
Cys	Ala	Ser	Gly	Phe	Phe	Gly	Asn	Pro	Ser	Asp	Phe	Gly	Gly	Ser	Cys					
			900						905						910					
Gln	Pro	Cys	Gln	Cys	His	His	Asn	Ile	Asp	Thr	Thr	Asp	Pro	Glu	Ala					
			915						920						925					
Cys	Asp	Lys	Asp	Thr	Gly	Arg	Cys	Leu	Lys	Cys	Leu	Tyr	His	Thr	Glu					
			930						935						940					
Gly	Asp	His	Cys	Gln	Leu	Cys	Gln	Tyr	Gly	Tyr	Tyr	Gly	Asp	Ala	Leu					
			945						950						955					
Arg	Gln	Asp	Cys	Arg	Lys	Cys	Val	Cys	Asn	Tyr	Leu	Gly	Thr	Val	Lys					
			965						970						975					
Glu	His	Cys	Asn	Gly	Ser	Asp	Cys	His	Cys	Asp	Lys	Ala	Thr	Gly	Gln					
			980						985						990					
Cys	Ser	Cys	Leu	Pro	Asn	Val	Ile	Gly	Gln	Asn	Cys	Asp	Arg	Cys	Ala					
			995						1000						1005					
Pro	Asn	Thr	Trp	Gln	Leu	Ala	Ser	Gly	Thr	Gly	Cys	Gly	Pro	Cys	Asn					
			1010						1015						1020					
Cys	Asn	Ala	Ala	His	Ser	Phe	Gly	Pro	Ser	Cys	Asn	Glu	Phe	Thr	Gly					
			1025						1030						1035					
Gln	Cys	Gln	Cys	Met	Pro	Gly	Phe	Gly	Gly	Arg	Thr	Cys	Ser	Glu	Cys					
			1045						1050						1055					
Gln	Glu	Leu	Phe	Trp	Gly	Asp	Pro	Asp	Val	Glu	Cys	Arg	Ala	Cys	Asp					
			1060						1065						1070					
Cys	Asp	Pro	Arg	Gly	Ile	Glu	Thr	Pro	Gln	Cys	Asp	Gln	Ser	Thr	Gly					
			1075						1080						1085					
Gln	Cys	Val	Cys	Val	Glu	Gly	Val	Glu	Gly	Pro	Arg	Cys	Asp	Lys	Cys					
			1090						1095						1100					
Thr	Arg	Gly	Tyr	Ser	Gly	Val	Phe	Pro	Asp	Cys	Thr	Pro	Cys	His	Gln					
			1105						1110						1115					
Cys	Phe	Ala	Leu	Trp	Asp	Ala	Ile	Ile	Gly	Glu	Leu	Thr	Asn	Arg	Thr					
			1125						1130						1135					
His	Lys	Phe	Leu	Glu	Lys	Ala	Lys	Ala	Leu	Lys	Ile	Ser	Gly	Val	Ile					
			1140						1145						1150					
Gly	Pro	Tyr	Arg	Glu	Thr	Val	Asp	Ser	Val	Glu	Lys	Lys	Val	Asn	Glu					
			1155						1160						1165					
Ile	Lys	Asp	Ile	Leu	Ala	Gln	Ser	Pro	Ala	Ala	Glu	Pro	Leu	Lys	Asn					
			1170						1175						1180					
Ile	Gly	Ile	Leu	Phe	Glu	Glu	Ala	Glu	Lys	Leu	Thr	Lys	Asp	Val	Thr					
			1185						1190						1195					
Glu	Lys	Met	Ala	Gln	Val	Glu	Val	Lys	Leu	Thr	Asp	Thr	Ala	Ser	Gln					
			1205						1210						1215					

Ser Asn Ser Thr Ala Gly Glu Leu Gly Ala Leu Gln Ala Glu Ala Glu  
1220 1225 1230

Ser Leu Asp Lys Thr Val Lys Glu Leu Ala Glu Gln Leu Glu Phe Ile  
1235 1240 1245

Lys Asn Ser Asp Ile Gln Gly Ala Leu Asp Ser Ile Thr Lys Tyr Phe  
1250 1255 1260

Gln Met Ser Leu Glu Ala Glu Lys Arg Val Asn Ala Ser Thr Thr Asp  
1265 1270 1275 1280

Pro Asn Ser Thr Val Glu Gln Ser Ala Leu Thr Arg Asp Arg Val Glu  
1285 1290 1295

Asp Leu Met Leu Glu Arg Glu Ser Pro Phe Lys Glu Gln Gln Glu Glu  
1300 1305 1310

Gln Ala Arg Leu Leu Asp Glu Leu Ala Gly Lys Leu Gln Ser Leu Asp  
1315 1320 1325

Leu Ser Ala Ala Ala Gln Met Thr Cys Gly Thr Pro Pro Gly Ala Asp  
1330 1335 1340

Cys Ser Glu Ser Glu Cys Gly Gly Pro Asn Cys Arg Thr Asp Glu Gly  
1345 1350 1355 1360

Glu Lys Lys Cys Gly Gly Pro Gly Cys Gly Gly Leu Val Thr Val Ala  
1365 1370 1375

His Ser Ala Trp Gln Lys Ala Met Asp Phe Asp Arg Asp Val Leu Ser  
1380 1385 1390

Ala Leu Ala Glu Val Glu Gln Leu Ser Lys Met Val Ser Glu Ala Lys  
1395 1400 1405

Val Arg Ala Asp Glu Ala Lys Gln Asn Ala Gln Asp Val Leu Leu Lys  
1410 1415 1420

Thr Asn Ala Thr Lys Glu Lys Val Asp Lys Ser Asn Glu Asp Leu Arg  
1425 1430 1435 1440

Asn Leu Ile Lys Gln Ile Arg Asn Phe Leu Thr Glu Asp Ser Ala Asp  
1445 1450 1455

Leu Asp Ser Ile Glu Ala Val Ala Asn Glu Val Leu Lys Ser Gly Asn  
1460 1465 1470

Ala Ser Thr Pro Gln Gln Leu Gln Asn Leu Thr Glu Asp Ile Arg Glu  
1475 1480 1485

Arg Val Glu Thr Leu Ser Gln Val Glu Val Ile Leu Gln Gln Ser Ala  
1490 1495 1500

Ala Asp Ile Ala Arg Ala Glu Leu Leu Leu Glu Glu Ala Lys Arg Ala  
1505 1510 1515 1520

Ser Lys Ser Ala Thr Asp Val Lys Val Thr Ala Asp Met Val Lys Glu  
1525 1530 1535



	1	5	10	
egg ccc egg ggg egg ctc tgg ccc gtg ctg gcc gtg ctg gcg gcg gcc				340
Arg Pro Arg Gly Arg Leu Trp Pro Val Leu Ala Val Leu Ala Ala Ala	15	20	25	
gcc gcg gcg ggc tgt gcc cag gca gcc atg gac gag tgc acg gac gag				388
Ala Ala Ala Gly Cys Ala Gln Ala Ala Met Asp Glu Cys Thr Asp Glu	30	35	40	
ggc ggg egg ccg cag cgc tgc atg ccc gag ttc gtc aac gcc gct ttc				436
Gly Gly Arg Pro Gln Arg Cys Met Pro Glu Phe Val Asn Ala Ala Phe	45	50	55	
aac gtg act gtg gtg gcc acc aac acg tgt ggg act ccg ccc gag gaa				484
Asn Val Thr Val Val Ala Thr Asn Thr Cys Gly Thr Pro Pro Glu Glu	60	65	70	75
tac tgt gtg cag acc ggg gtg acc ggg gtc acc aag tcc tgt cac ctg				532
Tyr Cys Val Gln Thr Gly Val Thr Gly Val Thr Lys Ser Cys His Leu	80	85	90	
tgc gac gcc ggg cag ccc cac ctg cag cac ggg gca gcc ttc ctg acc				580
Cys Asp Ala Gly Gln Pro His Leu Gln His Gly Ala Ala Phe Leu Thr	95	100	105	
gac tac aac aac cag gcc gac acc acc tgg tgg caa agc cag acc atg				628
Asp Tyr Asn Asn Gln Ala Asp Thr Thr Trp Trp Gln Ser Gln Thr Met	110	115	120	
ctg gcc ggg gtg cag tac ccc agc tcc atc aac ctc acg ctg cac ctg				676
Leu Ala Gly Val Gln Tyr Pro Ser Ser Ile Asn Leu Thr Leu His Leu	125	130	135	
gga aaa gct ttt gac atc acc tat gtg cgt ctc aag ttc cac acc agc				724
Gly Lys Ala Phe Asp Ile Thr Tyr Val Arg Leu Lys Phe His Thr Ser	140	145	150	155
cgc ccg gag agc ttt gcc att tac aag cgc aca cgg gaa gac ggg ccc				772
Arg Pro Glu Ser Phe Ala Ile Tyr Lys Arg Thr Arg Glu Asp Gly Pro	160	165	170	
tgg att cct tac cag tac tac agt ggt tcc tgc gag aac acc tac tcc				820
Trp Ile Pro Tyr Gln Tyr Tyr Ser Gly Ser Cys Glu Asn Thr Tyr Ser	175	180	185	
aag gca aac cgc ggc ttc atc agg aca gga ggg gac gag cag cag gcc				868
Lys Ala Asn Arg Gly Phe Ile Arg Thr Gly Gly Asp Glu Gln Gln Ala	190	195	200	
ttg tgt act gat gaa ttc agt gac att tct ccc ctc act ggg ggc aac				916
Leu Cys Thr Asp Glu Phe Ser Asp Ile Ser Pro Leu Thr Gly Gly Asn	205	210	215	
gtg gcc ttt tct acc ctg gaa gga agg ccc agc gcc tat aac ttt gac				964
Val Ala Phe Ser Thr Leu Glu Gly Arg Pro Ser Ala Tyr Asn Phe Asp	220	225	230	235
aat agc cct gtg ctg cag gaa tgg gta act gcc act gac atc aga gta				1012
Asn Ser Pro Val Leu Gln Glu Trp Val Thr Ala Thr Asp Ile Arg Val	240	245	250	



tgc aca ccc tgc ttc tgc ttt ggg cat tct tct gtc tgt aca aac gct	1780
Cys Thr Pro Cys Phe Cys Phe Gly His Ser Ser Val Cys Thr Asn Ala	
495 500 505	
gtt ggc tac agt gtt tat tct atc tcc tct acc ttt cag att gat gag	1828
Val Gly Tyr Ser Val Tyr Ser Ile Ser Ser Thr Phe Gln Ile Asp Glu	
510 515 520	
gat ggg tgg cgt gcg gaa cag aga gat ggc tct gaa gca tct ctc gag	1876
Asp Gly Trp Arg Ala Glu Gln Arg Asp Gly Ser Glu Ala Ser Leu Glu	
525 530 535	
tgg tcc tct gag agg caa gat atc gcc gtg atc tca gac agc tac ttt	1924
Trp Ser Ser Glu Arg Gln Asp Ile Ala Val Ile Ser Asp Ser Tyr Phe	
540 545 550 555	
cct cgg tac ttc att gct cct gca aag ttc ttg ggc aag cag gtg ttg	1972
Pro Arg Tyr Phe Ile Ala Pro Ala Lys Phe Leu Gly Lys Gln Val Leu	
560 565 570	
agt tat ggt cag aac ctc tcc ttc tcc ttt cga gtg gac agg cga gat	2020
Ser Tyr Gly Gln Asn Leu Ser Phe Ser Phe Arg Val Asp Arg Arg Asp	
575 580 585	
act cgc ctc tct gcc gaa gac ctt gtg ctt gag gga gct ggc tta aga	2068
Thr Arg Leu Ser Ala Glu Asp Leu Val Leu Glu Gly Ala Gly Leu Arg	
590 595 600	
gta tct gta ccc ttg atc gct cag ggc aat tcc tat cca agt gag acc	2116
Val Ser Val Pro Leu Ile Ala Gln Gly Asn Ser Tyr Pro Ser Glu Thr	
605 610 615	
act gtg aag tat gtc ttc agg ctc cat gaa gca aca gat tac cct tgg	2164
Thr Val Lys Tyr Val Phe Arg Leu His Glu Ala Thr Asp Tyr Pro Trp	
620 625 630 635	
agg cct gct ctt acc cct ttt gaa ttt cag aag ctc cta aac aac ttg	2212
Arg Pro Ala Leu Thr Pro Phe Glu Phe Gln Lys Leu Leu Asn Asn Leu	
640 645 650	
acc tct atc aag ata cgt ggg aca tac agt gag aga agt gct gga tat	2260
Thr Ser Ile Lys Ile Arg Gly Thr Tyr Ser Glu Arg Ser Ala Gly Tyr	
655 660 665	
ttg gat gat gtc acc ctg gca agt gct cgt cct ggg cct gga gtc cct	2308
Leu Asp Asp Val Thr Leu Ala Ser Ala Arg Pro Gly Pro Gly Val Pro	
670 675 680	
gca act tgg gtg gag tcc tgc acc tgt cct gtg gga tat gga ggg cag	2356
Ala Thr Trp Val Glu Ser Cys Thr Cys Pro Val Gly Tyr Gly Gly Gln	
685 690 695	
ttt tgt gag atg tgc ctc tca ggt tac aga aga gaa act cct aat ctt	2404
Phe Cys Glu Met Cys Leu Ser Gly Tyr Arg Arg Glu Thr Pro Asn Leu	
700 705 710 715	
gga cca tac agt cca tgt gtg ctt tgc gcc tgc aat gga cac agc gag	2452
Gly Pro Tyr Ser Pro Cys Val Leu Cys Ala Cys Asn Gly His Ser Glu	
720 725 730	
acc tgt gat cct gag aca ggt gtt tgt aac tgc aga gac aat acg gct	2500

Thr Cys Asp Pro Glu Thr Gly Val Cys Asn Cys Arg Asp Asn Thr Ala	
735 740 745	
ggc ccg cac tgt gag aag tgc agt gat ggg tac tat gga gat tca act	2548
Gly Pro His Cys Glu Lys Cys Ser Asp Gly Tyr Tyr Gly Asp Ser Thr	
750 755 760	
gca ggc acc tcc tcc gat tgc caa ccc tgt ccg tgt cct gga ggt tca	2596
Ala Gly Thr Ser Ser Asp Cys Gln Pro Cys Pro Cys Pro Gly Gly Ser	
765 770 775	
agt tgt gct gtt gtt ccc aag aca aag gag gtg gtg tgc acc aac tgt	2644
Ser Cys Ala Val Val Pro Lys Thr Lys Glu Val Val Cys Thr Asn Cys	
780 785 790 795	
cct act ggc acc act ggt aag aga tgt gag ctc tgt gat gat ggc tac	2692
Pro Thr Gly Thr Thr Gly Lys Arg Cys Glu Leu Cys Asp Asp Gly Tyr	
800 805 810	
ttt gga gac ccc ctg ggt aga aac ggc cct gtg aga ctt tgc cgc ctg	2740
Phe Gly Asp Pro Leu Gly Arg Asn Gly Pro Val Arg Leu Cys Arg Leu	
815 820 825	
tgc cag tgc agt gac aac atc gat ccc aac gca gtt gga aat tgc aat	2788
Cys Gln Cys Ser Asp Asn Ile Asp Pro Asn Ala Val Gly Asn Cys Asn	
830 835 840	
cgc ttg acg gga gaa tgc ctg aag tgc atc tat aac act gct ggc ttc	2836
Arg Leu Thr Gly Glu Cys Leu Lys Cys Ile Tyr Asn Thr Ala Gly Phe	
845 850 855	
tat tgt gac cgg tgc aaa gac gga ttt ttt gga aat ccc ctg gct ccc	2884
Tyr Cys Asp Arg Cys Lys Asp Gly Phe Phe Gly Asn Pro Leu Ala Pro	
860 865 870 875	
aat cca gca gac aaa tgc aaa gcc tgc aat tgc aat ccg tat ggg acc	2932
Asn Pro Ala Asp Lys Cys Lys Ala Cys Asn Cys Asn Pro Tyr Gly Thr	
880 885 890	
atg aag cag cag agc agc tgt aac ccc gtg acg ggg cag tgt gaa tgt	2980
Met Lys Gln Gln Ser Ser Cys Asn Pro Val Thr Gly Gln Cys Glu Cys	
895 900 905	
ttg cct cac gtg act ggc cag gac tgt ggt gct tgt gac cct gga ttc	3028
Leu Pro His Val Thr Gly Gln Asp Cys Gly Ala Cys Asp Pro Gly Phe	
910 915 920	
tac aat ctg cag agt ggg caa gcc tgt gag agg tgt gac tgc cat gcc	3076
Tyr Asn Leu Gln Ser Gly Gln Gly Cys Glu Arg Cys Asp Cys His Ala	
925 930 935	
ttg ggc tcc acc aat ggg cag tgt gac atc cgc acc ggc cag tgt gag	3124
Leu Gly Ser Thr Asn Gly Gln Cys Asp Ile Arg Thr Gly Gln Cys Glu	
940 945 950 955	
tgc cag ccc ggc atc act ggt cag cac tgt gag cgc tgt gag gtc aac	3172
Cys Gln Pro Gly Ile Thr Gly Gln His Cys Glu Arg Cys Glu Val Asn	
960 965 970	
cac ttt ggg ttt gga cct gaa gcc tgc aaa ccc tgt gac tgt cat cct	3220
His Phe Gly Phe Gly Pro Glu Gly Cys Lys Pro Cys Asp Cys His Pro	

975	980	985	
gag gga tct ctt tca ctt cag tgc	aaa gat gat ggt cgc tgt gaa tgc		3268
Glu Gly Ser Leu Ser Leu Gln Cys	Lys Asp Asp Gly Arg Cys Glu Cys		
990	995 1000		
aga gaa ggc ttt gtg gga aat cgc	tgt gac cag tgt gaa gaa aac tat		3316
Arg Glu Gly Phe Val Gly Asn Arg	Cys Asp Gln Cys Glu Glu Asn Tyr		
1005	1010 1015		
ttc tac aat cgg tct tgg cct ggc	tgc cag gaa tgt cca gct tgt tac		3364
Phe Tyr Asn Arg Ser Trp Pro Gly	Cys Gln Glu Cys Pro Ala Cys Tyr		
1020	1025 1030 1035		
cgg ctg gta aag gat aag gtt gct	gat cat aga gtg aag ctc cag gaa		3412
Arg Leu Val Lys Asp Lys Val Ala	Asp His Arg Val Lys Leu Gln Glu		
1040	1045 1050		
tta gag agt ctc ata gca aac ctt	gga act ggg gat gag atg gtg aca		3460
Leu Glu Ser Leu Ile Ala Asn Leu	Gly Thr Gly Asp Glu Met Val Thr		
1055	1060 1065		
gat caa gcc ttc gag gat aga cta	aag gaa gca gag agg gaa gtt atg		3508
Asp Gln Ala Phe Glu Asp Arg Leu	Lys Glu Ala Glu Arg Glu Val Met		
1070	1075 1080		
gac ctc ctt cgt gag gcc cag gat	gtc aaa gat gtt gac cag aat ttg		3556
Asp Leu Leu Arg Glu Ala Gln Asp	Val Lys Asp Val Asp Gln Asn Leu		
1085	1090 1095		
atg gat cgc cta cag aga gtg aat	aac act ctg tcc agc caa att agc		3604
Met Asp Arg Leu Gln Arg Val Asn	Asn Thr Leu Ser Ser Gln Ile Ser		
1100	1105 1110 1115		
cgt tta cag aat atc cgg aat acc	att gaa gag act gga aac ttg gct		3652
Arg Leu Gln Asn Ile Arg Asn Thr	Ile Glu Glu Thr Gly Asn Leu Ala		
1120	1125 1130		
gaa caa gcg cgt gcc cat gta gag	aac aca gag cgg ttg att gaa atc		3700
Glu Gln Ala Arg Ala His Val Glu	Asn Thr Glu Arg Leu Ile Glu Ile		
1135	1140 1145		
gca tcc aga gaa ctt gag aaa gca	aaa gtc gct gct gcc aat gtg tca		3748
Ala Ser Arg Glu Leu Glu Lys Ala	Lys Val Ala Ala Ala Asn Val Ser		
1150	1155 1160		
gtc act cag cca gaa tct aca ggg	gac cca aac aac atg act ctt ttg		3796
Val Thr Gln Pro Glu Ser Thr Gly	Asp Pro Asn Asn Met Thr Leu Leu		
1165	1170 1175		
gca gaa gag gct cga aag ctt gct	gaa cgt cat aaa cag gaa gct gat		3844
Ala Glu Glu Ala Arg Lys Leu Ala	Glu Arg His Lys Gln Glu Ala Asp		
1180	1185 1190 1195		
gac att gtt cga gtg gca aag aca	gcc aat gat acg tca act gag gca		3892
Asp Ile Val Arg Val Ala Lys Thr	Ala Asn Asp Thr Ser Thr Glu Ala		
1200	1205 1210		
tac aac ctg ctt ctg agg aca ctg	gca gga gaa aat caa aca gca ttt		3940
Tyr Asn Leu Leu Leu Arg Thr Leu	Ala Gly Glu Asn Gln Thr Ala Phe		
1215	1220 1225		



gag att gaa gag ctt aat agg aag tat gaa caa gcg aag aac atc tca																	3988
Glu Ile	Glu Glu	Leu Asn	Arg Lys	Tyr Glu	Gln Gln	Ala Lys	Asn Ile	Ser									
1230			1235			1240											
cag gat ctg gaa aaa caa gct gcc cga gta cat gag gag gcc aaa agg																	4036
Gln Asp	Leu Glu	Lys Gln	Ala Ala	Arg Val	His	Glu Glu	Ala Lys	Arg									
1245			1250			1255											
gcc ggt gac aaa gct gtg gag atc tat gcc agc gtg gct cag ctg agc																	4084
Ala Gly	Asp Lys	Ala Val	Glu Ile	Tyr Ala	Ser Val	Ala Gln	Leu Ser										
1260			1265			1270											
cct ttg gac tct gag aca ctg gag aat gaa gca aat aac ata aag atg																	4132
Pro Leu	Asp Ser	Glu Thr	Leu Glu	Asn Glu	Ala Asn	Asn Ile	Lys Met										
1280			1285			1290											
gaa gct gag aat ctg gaa caa ctg att gac cag aaa tta aaa gat tat																	4180
Glu Ala	Asn Leu	Glu Gln	Leu Ile	Asp Gln	Lys Leu	Lys Asp	Tyr										
1295			1300			1305											
gag gac ctc aga gaa gat atg aga ggg aag gaa ctt gaa gtc aag aac																	4228
Glu Asp	Leu Arg	Glu Asp	Met Arg	Gly Lys	Glu Leu	Glu Val	Lys Asn										
1310			1315			1320											
ctt ctg gag aaa ggc aag act gaa cag cag acc gca gac caa ctc cta																	4276
Leu Leu	Glu Lys	Gly Lys	Thr Glu	Gln Gln	Thr Ala	Asp Gln	Leu Leu										
1325			1330			1335											
gcc cga gct gat gct gcc aag gcc ctc gct gaa gaa gct gca aag aag																	4324
Ala Arg	Ala Asp	Ala Ala	Lys Ala	Leu Ala	Glu Glu	Glu Ala	Ala Lys	Lys									
1340			1345			1350											
gga cgg gat acc tta caa gaa gct aat gac att ctc aac aac ctg aaa																	4372
Gly Arg	Asp Thr	Leu Gln	Glu Ala	Asn Asp	Ile Leu	Asn Asn	Leu Lys										
1360			1365			1370											
gat ttt gat agg cgc gtg aac gat aac aag acg gcc gca gag gag gca																	4420
Asp Phe	Asp Arg	Arg Val	Asn Asp	Asn Lys	Thr Ala	Glu Glu	Glu Ala										
1375			1380			1385											
cta agg aag att cct gcc atc aac cag acc atc act gaa gcc aat gaa																	4468
Leu Arg	Lys Ile	Pro Ala	Ile Asn	Gln Thr	Ile Thr	Glu Ala	Asn Glu										
1390			1395			1400											
aag acc aga gaa gcc cag cag gcc ctg ggc agt gct gcg gcg gat gcc																	4516
Lys Thr	Arg Glu	Ala Gln	Gln Ala	Leu Gly	Ser Ala	Ala Ala	Asp Ala										
1405			1410			1415											
aca gag gcc aag aac aag gcc cat gag gcg gag agg atc gca agc gct																	4564
Thr Glu	Ala Lys	Asn Lys	Ala His	Glu Ala	Glu Glu	Arg Ile	Ala Ser	Ala									
1420			1425			1430											
gtc caa aag aat gcc acc agc acc aag gca gaa gct gaa aga act ttt																	4612
Val Gln	Lys Asn	Ala Thr	Ser Thr	Lys Ala	Glu Glu	Ala Arg	Thr Phe										
1440			1445			1450											
gca gaa gtt aca gat ctg gat aat gag gtg aac aat atg ttg aag caa																	4660
Ala Glu	Val Thr	Asp Leu	Asp Asn	Glu Val	Asn Asn	Met Leu	Lys Gln										
1455			1460			1465											

ctg cag gaa gca gaa aaa gag cta aag aga aaa caa gat gac gct gac 4708  
 Leu Gln Glu Ala Glu Lys Glu Leu Lys Arg Lys Gln Asp Asp Ala Asp  
 1470 1475 1480

cag gac atg atg atg gca ggg atg gct tca cag gct gct caa gaa gcc 4756  
 Gln Asp Met Met Met Ala Gly Met Ala Ser Gln Ala Ala Gln Glu Ala  
 1485 1490 1495

gag atc aat gcc aga aaa gcc aaa aac tct gtt act agc ctc ctc agc 4804  
 Glu Ile Asn Ala Arg Lys Ala Lys Asn Ser Val Thr Ser Leu Leu Ser  
 1500 1505 1510 1515

att att aat gac ctc ttg gag cag ctg ggg cag ctg gat aca gtg gac 4852  
 Ile Ile Asn Asp Leu Leu Glu Gln Leu Gly Gln Leu Asp Thr Val Asp  
 1520 1525 1530

ctg aat aag cta aac gag att gaa ggc acc cta aac aaa gcc aaa gat 4900  
 Leu Asn Lys Leu Asn Glu Ile Glu Gly Thr Leu Asn Lys Ala Lys Asp  
 1535 1540 1545

gaa atg aag gtc agc gat ctt gat agg aaa gtg tct gac ctg gag aat 4948  
 Glu Met Lys Val Ser Asp Leu Asp Arg Lys Val Ser Asp Leu Glu Asn  
 1550 1555 1560

gaa gcc aag aag cag gag gct gcc atc atg gac tat aac cga gat atc 4996  
 Glu Ala Lys Lys Gln Glu Ala Ala Ile Met Asp Tyr Asn Arg Asp Ile  
 1565 1570 1575

gag gag atc atg aag gac att cgc aat ctg gag gac atc agg aag acc 5044  
 Glu Glu Ile Met Lys Asp Ile Arg Asn Leu Glu Asp Ile Arg Lys Thr  
 1580 1585 1590 1595

tta cca tct ggc tgc ttc aac acc ccg tcc att gaa aag ccc 5086  
 Leu Pro Ser Gly Cys Phe Asn Thr Pro Ser Ile Glu Lys Pro  
 1600 1605

tagtgtctttt agggctggaa ggcagcatcc ctctgacagg ggggcagttg tgaggccaca 5146

gagtgccttg acacaaagat tacatttttc agacccccac tcctctgctg ctgtccatca 5206

ctgtcctttt gaaccaggaa aagtcacaga gtttaaagag aagcaaatta aacatcctga 5266

atcggaaca aagggtttta tctaataaag tgtctcttcc 5306

<210> 14  
 <211> 1609  
 <212> PRT  
 <213> Homo sapiens

<400> 14  
 Met Arg Gly Ser His Arg Ala Ala Pro Ala Leu Arg Pro Arg Gly Arg  
 1 5 10 15  
 Leu Trp Pro Val Leu Ala Val Leu Ala Ala Ala Ala Ala Gly Cys  
 20 25 30  
 Ala Gln Ala Ala Met Asp Glu Cys Thr Asp Glu Gly Gly Arg Pro Gln  
 35 40 45  
 Arg Cys Met Pro Glu Phe Val Asn Ala Ala Phe Asn Val Thr Val Val



Asn	Phe	Phe	Arg	Leu	Gly	Asn	Asn	Glu	Ala	Cys	Ser	Ser	Cys	His	Cys	385	390	395	400
Ser	Pro	Val	Gly	Ser	Leu	Ser	Thr	Gln	Cys	Asp	Ser	Tyr	Gly	Arg	Cys	405	410	415	
Ser	Cys	Lys	Pro	Gly	Val	Met	Gly	Asp	Lys	Cys	Asp	Arg	Cys	Gln	Pro	420	425	430	
Gly	Phe	His	Ser	Leu	Thr	Glu	Ala	Gly	Cys	Arg	Pro	Cys	Ser	Cys	Asp	435	440	445	
Pro	Ser	Gly	Ser	Ile	Asp	Glu	Cys	Asn	Val	Glu	Thr	Gly	Arg	Cys	Val	450	455	460	
Cys	Lys	Asp	Asn	Val	Glu	Gly	Phe	Asn	Cys	Glu	Arg	Cys	Lys	Pro	Gly	465	470	475	480
Phe	Phe	Asn	Leu	Glu	Ser	Ser	Asn	Pro	Arg	Gly	Cys	Thr	Pro	Cys	Phe	485	490	495	
Cys	Phe	Gly	His	Ser	Ser	Val	Cys	Thr	Asn	Ala	Val	Gly	Tyr	Ser	Val	500	505	510	
Tyr	Ser	Ile	Ser	Ser	Thr	Phe	Gln	Ile	Asp	Glu	Asp	Gly	Trp	Arg	Ala	515	520	525	
Glu	Gln	Arg	Asp	Gly	Ser	Glu	Ala	Ser	Leu	Glu	Trp	Ser	Ser	Glu	Arg	530	535	540	
Gln	Asp	Ile	Ala	Val	Ile	Ser	Asp	Ser	Tyr	Phe	Pro	Arg	Tyr	Phe	Ile	545	550	555	560
Ala	Pro	Ala	Lys	Phe	Leu	Gly	Lys	Gln	Val	Leu	Ser	Tyr	Gly	Gln	Asn	565	570	575	
Leu	Ser	Phe	Ser	Phe	Arg	Val	Asp	Arg	Arg	Asp	Thr	Arg	Leu	Ser	Ala	580	585	590	
Glu	Asp	Leu	Val	Leu	Glu	Gly	Ala	Gly	Leu	Arg	Val	Ser	Val	Pro	Leu	595	600	605	
Ile	Ala	Gln	Gly	Asn	Ser	Tyr	Pro	Ser	Glu	Thr	Thr	Val	Lys	Tyr	Val	610	615	620	
Phe	Arg	Leu	His	Glu	Ala	Thr	Asp	Tyr	Pro	Trp	Arg	Pro	Ala	Leu	Thr	625	630	635	640
Pro	Phe	Glu	Phe	Gln	Lys	Leu	Leu	Asn	Asn	Leu	Thr	Ser	Ile	Lys	Ile	645	650	655	
Arg	Gly	Thr	Tyr	Ser	Glu	Arg	Ser	Ala	Gly	Tyr	Leu	Asp	Asp	Val	Thr	660	665	670	
Leu	Ala	Ser	Ala	Arg	Pro	Gly	Pro	Gly	Val	Pro	Ala	Thr	Trp	Val	Glu	675	680	685	
Ser	Cys	Thr	Cys	Pro	Val	Gly	Tyr	Gly	Gly	Gln	Phe	Cys	Glu	Met	Cys	690	695	700	

Leu	Ser	Gly	Tyr	Arg	Arg	Glu	Thr	Pro	Asn	Leu	Gly	Pro	Tyr	Ser	Pro	705	710	715	720
Cys	Val	Leu	Cys	Ala	Cys	Asn	Gly	His	Ser	Glu	Thr	Cys	Asp	Pro	Glu	725	730	735	
Thr	Gly	Val	Cys	Asn	Cys	Arg	Asp	Asn	Thr	Ala	Gly	Pro	His	Cys	Glu	740	745	750	
Lys	Cys	Ser	Asp	Gly	Tyr	Tyr	Gly	Asp	Ser	Thr	Ala	Gly	Thr	Ser	Ser	755	760	765	
Asp	Cys	Gln	Pro	Cys	Pro	Cys	Pro	Gly	Gly	Ser	Ser	Cys	Ala	Val	Val	770	775	780	
Pro	Lys	Thr	Lys	Glu	Val	Val	Cys	Thr	Asn	Cys	Pro	Thr	Gly	Thr	Thr	785	790	795	800
Gly	Lys	Arg	Cys	Glu	Leu	Cys	Asp	Asp	Gly	Tyr	Phe	Gly	Asp	Pro	Leu	805	810	815	
Gly	Arg	Asn	Gly	Pro	Val	Arg	Leu	Cys	Arg	Leu	Cys	Gln	Cys	Ser	Asp	820	825	830	
Asn	Ile	Asp	Pro	Asn	Ala	Val	Gly	Asn	Cys	Asn	Arg	Leu	Thr	Gly	Glu	835	840	845	
Cys	Leu	Lys	Cys	Ile	Tyr	Asn	Thr	Ala	Gly	Phe	Tyr	Cys	Asp	Arg	Cys	850	855	860	
Lys	Asp	Gly	Phe	Phe	Gly	Asn	Pro	Leu	Ala	Pro	Asn	Pro	Ala	Asp	Lys	865	870	875	880
Cys	Lys	Ala	Cys	Asn	Cys	Asn	Pro	Tyr	Gly	Thr	Met	Lys	Gln	Gln	Ser	885	890	895	
Ser	Cys	Asn	Pro	Val	Thr	Gly	Gln	Cys	Glu	Cys	Leu	Pro	His	Val	Thr	900	905	910	
Gly	Gln	Asp	Cys	Gly	Ala	Cys	Asp	Pro	Gly	Phe	Tyr	Asn	Leu	Gln	Ser	915	920	925	
Gly	Gln	Gly	Cys	Glu	Arg	Cys	Asp	Cys	His	Ala	Leu	Gly	Ser	Thr	Asn	930	935	940	
Gly	Gln	Cys	Asp	Ile	Arg	Thr	Gly	Gln	Cys	Glu	Cys	Gln	Pro	Gly	Ile	945	950	955	960
Thr	Gly	Gln	His	Cys	Glu	Arg	Cys	Glu	Val	Asn	His	Phe	Gly	Phe	Gly	965	970	975	
Pro	Glu	Gly	Cys	Lys	Pro	Cys	Asp	Cys	His	Pro	Glu	Gly	Ser	Leu	Ser	980	985	990	
Leu	Gln	Cys	Lys	Asp	Asp	Gly	Arg	Cys	Glu	Cys	Arg	Glu	Gly	Phe	Val	995	1000	1005	
Gly	Asn	Arg	Cys	Asp	Gln	Cys	Glu	Glu	Asn	Tyr	Phe	Tyr	Asn	Arg	Ser	1010	1015	1020	
Trp	Pro	Gly	Cys	Gln	Glu	Cys	Pro	Ala	Cys	Tyr	Arg	Leu	Val	Lys	Asp				

1025	1030	1035	1040
Lys Val Ala Asp His Arg Val Lys Leu Gln Glu Leu Glu Ser Leu Ile			
1045	1050	1055	
Ala Asn Leu Gly Thr Gly Asp Glu Met Val Thr Asp Gln Ala Phe Glu			
1060	1065	1070	
Asp Arg Leu Lys Glu Ala Glu Arg Glu Val Met Asp Leu Leu Arg Glu			
1075	1080	1085	
Ala Gln Asp Val Lys Asp Val Asp Gln Asn Leu Met Asp Arg Leu Gln			
1090	1095	1100	
Arg Val Asn Asn Thr Leu Ser Ser Gln Ile Ser Arg Leu Gln Asn Ile			
1105	1110	1115	1120
Arg Asn Thr Ile Glu Glu Thr Gly Asn Leu Ala Glu Gln Ala Arg Ala			
1125	1130	1135	
His Val Glu Asn Thr Glu Arg Leu Ile Glu Ile Ala Ser Arg Glu Leu			
1140	1145	1150	
Glu Lys Ala Lys Val Ala Ala Ala Asn Val Ser Val Thr Gln Pro Glu			
1155	1160	1165	
Ser Thr Gly Asp Pro Asn Asn Met Thr Leu Leu Ala Glu Glu Ala Arg			
1170	1175	1180	
Lys Leu Ala Glu Arg His Lys Gln Glu Ala Asp Asp Ile Val Arg Val			
1185	1190	1195	1200
Ala Lys Thr Ala Asn Asp Thr Ser Thr Glu Ala Tyr Asn Leu Leu Leu			
1205	1210	1215	
Arg Thr Leu Ala Gly Glu Asn Gln Thr Ala Phe Glu Ile Glu Glu Leu			
1220	1225	1230	
Asn Arg Lys Tyr Glu Gln Ala Lys Asn Ile Ser Gln Asp Leu Glu Lys			
1235	1240	1245	
Gln Ala Ala Arg Val His Glu Glu Ala Lys Arg Ala Gly Asp Lys Ala			
1250	1255	1260	
Val Glu Ile Tyr Ala Ser Val Ala Gln Leu Ser Pro Leu Asp Ser Glu			
1265	1270	1275	1280
Thr Leu Glu Asn Glu Ala Asn Asn Ile Lys Met Glu Ala Glu Asn Leu			
1285	1290	1295	
Glu Gln Leu Ile Asp Gln Lys Leu Lys Asp Tyr Glu Asp Leu Arg Glu			
1300	1305	1310	
Asp Met Arg Gly Lys Glu Leu Glu Val Lys Asn Leu Leu Glu Lys Gly			
1315	1320	1325	
Lys Thr Glu Gln Gln Thr Ala Asp Gln Leu Leu Ala Arg Ala Asp Ala			
1330	1335	1340	
Ala Lys Ala Leu Ala Glu Glu Ala Ala Lys Lys Gly Arg Asp Thr Leu			
1345	1350	1355	1360

Gln Glu Ala Asn Asp Ile Leu Asn Asn Leu Lys Asp Phe Asp Arg Arg  
 1365 1370 1375  
 Val Asn Asp Asn Lys Thr Ala Ala Glu Glu Ala Leu Arg Lys Ile Pro  
 1380 1385 1390  
 Ala Ile Asn Gln Thr Ile Thr Glu Ala Asn Glu Lys Thr Arg Glu Ala  
 1395 1400 1405  
 Gln Gln Ala Leu Gly Ser Ala Ala Ala Asp Ala Thr Glu Ala Lys Asn  
 1410 1415 1420  
 Lys Ala His Glu Ala Glu Arg Ile Ala Ser Ala Val Gln Lys Asn Ala  
 1425 1430 1435 1440  
 Thr Ser Thr Lys Ala Glu Ala Glu Arg Thr Phe Ala Glu Val Thr Asp  
 1445 1450 1455  
 Leu Asp Asn Glu Val Asn Asn Met Leu Lys Gln Leu Gln Glu Ala Glu  
 1460 1465 1470  
 Lys Glu Leu Lys Arg Lys Gln Asp Asp Ala Asp Gln Asp Met Met Met  
 1475 1480 1485  
 Ala Gly Met Ala Ser Gln Ala Ala Gln Glu Ala Glu Ile Asn Ala Arg  
 1490 1495 1500  
 Lys Ala Lys Asn Ser Val Thr Ser Leu Leu Ser Ile Ile Asn Asp Leu  
 1505 1510 1515 1520  
 Leu Glu Gln Leu Gly Gln Leu Asp Thr Val Asp Leu Asn Lys Leu Asn  
 1525 1530 1535  
 Glu Ile Glu Gly Thr Leu Asn Lys Ala Lys Asp Glu Met Lys Val Ser  
 1540 1545 1550  
 Asp Leu Asp Arg Lys Val Ser Asp Leu Glu Asn Glu Ala Lys Lys Gln  
 1555 1560 1565  
 Glu Ala Ala Ile Met Asp Tyr Asn Arg Asp Ile Glu Glu Ile Met Lys  
 1570 1575 1580  
 Asp Ile Arg Asn Leu Glu Asp Ile Arg Lys Thr Leu Pro Ser Gly Cys  
 1585 1590 1595 1600  
 Phe Asn Thr Pro Ser Ile Glu Lys Pro  
 1605

<210> 15

<211> 4948

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(4728)

<400> 15

cag gca gcc atg gac gag tgc acg gac gag ggc ggg cgg ccg cag cgc 48

Gln	Ala	Ala	Met	Asp	Glu	Cys	Thr	Asp	Glu	Gly	Gly	Arg	Pro	Gln	Arg		
1				5					10					15			
tgc	atg	ccc	gag	ttc	gtc	aac	gcc	gct	ttc	aac	gtg	act	gtg	gtg	gcc	96	
Cys	Met	Pro	Glu	Phe	Val	Asn	Ala	Phe	Asn	Val	Thr	Val	Val	Ala			
		20						25				30					
acc	aac	acg	tgt	ggg	act	ccg	ccc	gag	gaa	tac	tgt	gtg	cag	acc	ggg	144	
Thr	Asn	Thr	Cys	Gly	Thr	Pro	Pro	Glu	Glu	Tyr	Cys	Val	Gln	Thr	Gly		
		35					40					45					
gtg	acc	ggg	gtc	acc	aag	tcc	tgt	cac	ctg	tgc	gac	gcc	ggg	cag	ccc	192	
Val	Thr	Gly	Val	Thr	Lys	Ser	Cys	His	Leu	Cys	Asp	Ala	Gly	Gln	Pro		
		50				55					60						
cac	ctg	cag	cac	ggg	gca	gcc	ttc	ctg	acc	gac	tac	aac	aac	cag	gcc	240	
His	Leu	Gln	His	Gly	Ala	Ala	Phe	Leu	Thr	Asp	Tyr	Asn	Asn	Gln	Ala		
	65				70					75					80		
gac	acc	acc	tgg	tgg	caa	agc	cag	acc	atg	ctg	gcc	ggg	gtg	cag	tac	288	
Asp	Thr	Thr	Trp	Trp	Gln	Ser	Gln	Thr	Met	Leu	Ala	Gly	Val	Gln	Tyr		
			85						90					95			
ccc	agc	tcc	atc	aac	ctc	acg	ctg	cac	ctg	gga	aaa	gct	ttt	gac	atc	336	
Pro	Ser	Ser	Ile	Asn	Leu	Thr	Leu	His	Leu	Gly	Lys	Ala	Phe	Asp	Ile		
			100					105					110				
acc	tat	gtg	cgt	ctc	aag	ttc	cac	acc	agc	cgc	ccg	gag	agc	ttt	gcc	384	
Thr	Tyr	Val	Arg	Leu	Lys	Phe	His	Thr	Ser	Arg	Pro	Glu	Ser	Phe	Ala		
		115					120					125					
att	tac	aag	cgc	aca	cgg	gaa	gac	ggg	ccc	tgg	att	cct	tac	cag	tac	432	
Ile	Tyr	Lys	Arg	Thr	Arg	Glu	Asp	Gly	Pro	Trp	Ile	Pro	Tyr	Gln	Tyr		
		130				135					140						
tac	agt	ggt	tcc	tgc	gag	aac	acc	tac	tcc	aag	gca	aac	cgc	ggc	ttc	480	
Tyr	Ser	Gly	Ser	Cys	Glu	Asn	Thr	Tyr	Ser	Lys	Ala	Asn	Arg	Gly	Phe		
				150						155				160			
atc	agg	aca	gga	ggg	gac	gag	cag	cag	gcc	ttg	tgt	act	gat	gaa	ttc	528	
Ile	Arg	Thr	Gly	Gly	Asp	Glu	Gln	Gln	Ala	Leu	Cys	Thr	Asp	Glu	Phe		
			165						170					175			
agt	gac	att	tct	ccc	ctc	act	ggg	ggc	aac	gtg	gcc	ttt	tct	acc	ctg	576	
Ser	Asp	Ile	Ser	Pro	Leu	Thr	Gly	Gly	Asn	Val	Ala	Phe	Ser	Thr	Leu		
			180					185					190				
gaa	gga	agg	ccc	agc	gcc	tat	aac	ttt	gac	aat	agc	cct	gtg	ctg	cag	624	
Glu	Gly	Arg	Pro	Ser	Ala	Tyr	Asn	Phe	Asp	Asn	Ser	Pro	Val	Leu	Gln		
		195					200					205					
gaa	tgg	gta	act	gcc	act	gac	atc	aga	gta	act	ctt	aat	cgc	ctg	aac	672	
Glu	Trp	Val	Thr	Ala	Thr	Asp	Ile	Arg	Val	Thr	Leu	Asn	Arg	Leu	Asn		
		210				215					220						
act	ttt	gga	gat	gaa	gtg	ttt	aac	gat	ccc	aaa	gtt	ctc	aag	tcc	tat	720	
Thr	Phe	Gly	Asp	Glu	Val	Phe	Asn	Asp	Pro	Lys	Val	Leu	Lys	Ser	Tyr		
				230						235					240		
tat	tat	gcc	atc	tct	gat	ttt	gct	gta	ggg	ggc	aga	tgt	aaa	tgt	aat	768	
Tyr	Tyr	Ala	Ile	Ser	Asp	Phe	Ala	Val	Gly	Gly	Arg	Cys	Lys	Cys	Asn		



245										250										255										
gga	cac	gca	agc	gag	tgt	atg	aag	aac	gaa	ttt	gat	aag	ctg	gtg	tgt	816														
Gly	His	Ala	Ser	Glu	Cys	Met	Lys	Asn	Glu	Phe	Asp	Lys	Leu	Val	Cys															
			260							265							270													
aat	tgc	aaa	cat	aac	aca	tat	gga	gta	gac	tgt	gaa	aag	tgt	ctt	cct	864														
Asn	Cys	Lys	His	Asn	Thr	Tyr	Gly	Val	Asp	Cys	Glu	Lys	Cys	Leu	Pro															
			275							280							285													
ttc	ttc	aat	gac	cgg	ccg	tgg	agg	agg	gca	act	gcg	gaa	agt	gcc	agt	912														
Phe	Phe	Asn	Asp	Arg	Pro	Trp	Arg	Arg	Ala	Thr	Ala	Glu	Ser	Ala	Ser															
			290							295							300													
gaa	tgc	ctg	ccc	tgt	gat	tgc	aat	ggc	cga	tcc	cag	gaa	tgc	tac	ttc	960														
Glu	Cys	Leu	Pro	Cys	Asp	Cys	Asn	Gly	Arg	Ser	Gln	Glu	Cys	Tyr	Phe															
			305							310							320													
gac	cct	gaa	ctc	tat	cgt	tcc	act	ggc	cat	ggg	ggc	cac	tgt	acc	aac	1008														
Asp	Pro	Glu	Leu	Tyr	Arg	Ser	Thr	Gly	His	Gly	Gly	His	Cys	Thr	Asn															
						325							330				335													
tgc	cag	gat	aac	aca	gat	ggc	gcc	cac	tgt	gag	agg	tgc	cga	gag	aac	1056														
Cys	Gln	Asp	Asn	Thr	Asp	Gly	Ala	His	Cys	Glu	Arg	Cys	Arg	Glu	Asn															
						340							345				350													
ttc	ttc	cgc	ctt	ggc	aac	aat	gaa	gcc	tgc	tct	tca	tgc	cac	tgt	agt	1104														
Phe	Phe	Arg	Leu	Gly	Asn	Asn	Glu	Ala	Cys	Ser	Ser	Cys	His	Cys	Ser															
						355							360				365													
cct	gtg	ggc	tct	cta	agc	aca	cag	tgt	gat	agt	tac	ggc	aga	tgc	agc	1152														
Pro	Val	Gly	Ser	Leu	Ser	Thr	Gln	Cys	Asp	Ser	Tyr	Gly	Arg	Cys	Ser															
						370							375				380													
tgt	aag	cca	gga	gtg	atg	ggg	gac	aaa	tgt	gac	cgt	tgc	cag	cct	gga	1200														
Cys	Lys	Pro	Gly	Val	Met	Gly	Asp	Lys	Cys	Asp	Arg	Cys	Gln	Pro	Gly															
						385							390				400													
ttc	cat	tct	ctc	act	gaa	gca	gga	tgc	agg	cca	tgc	tct	tgt	gat	ccc	1248														
Phe	His	Ser	Leu	Thr	Glu	Ala	Gly	Cys	Arg	Pro	Cys	Ser	Cys	Asp	Pro															
									405							410	415													
tct	ggc	agc	ata	gat	gaa	tgt	aat	gtt	gaa	aca	gga	aga	tgt	gtt	tgc	1296														
Ser	Gly	Ser	Ile	Asp	Glu	Cys	Asn	Val	Glu	Thr	Gly	Arg	Cys	Val	Cys															
									420							425	430													
aaa	gac	aat	gtc	gaa	ggc	ttc	aat	tgt	gaa	aga	tgc	aaa	cct	gga	ttt	1344														
Lys	Asp	Asn	Val	Glu	Gly	Phe	Asn	Cys	Glu	Arg	Cys	Lys	Pro	Gly	Phe															
									435							440	445													
ttt	aat	ctg	gaa	tca	tct	aat	cct	cgg	ggc	tgc	aca	ccc	tgc	ttc	tgc	1392														
Phe	Asn	Leu	Glu	Ser	Ser	Asn	Pro	Arg	Gly	Cys	Thr	Pro	Cys	Phe	Cys															
									450							455	460													
ttt	ggg	cat	tct	tct	gtc	tgt	aca	aac	gct	gtt	ggc	tac	agt	gtt	tat	1440														
Phe	Gly	His	Ser	Ser	Val	Cys	Thr	Asn	Ala	Val	Gly	Tyr	Ser	Val	Tyr															
									465							470	475	480												
tct	atc	tcc	tct	acc	ttt	cag	att	gat	gag	gat	ggg	tgg	cgt	gcg	gaa	1488														
Ser	Ile	Ser	Ser	Thr	Phe	Gln	Ile	Asp	Glu	Asp	Gly	Trp	Arg	Ala	Glu															
									485							490	495													

cag aga gat ggc tct gaa gca tct ctc gag tgg tcc tct gag agg caa	1536
Gln Arg Asp Gly Ser Glu Ala Ser Leu Glu Trp Ser Ser Glu Arg Gln	
500 505 510	
gat atc gcc gtg atc tca gac agc tac ttt cct cgg tac ttc att gct	1584
Asp Ile Ala Val Ile Ser Asp Ser Tyr Phe Pro Arg Tyr Phe Ile Ala	
515 520 525	
cct gca aag ttc ttg ggc aag cag gtg ttg agt tat ggt cag aac ctc	1632
Pro Ala Lys Phe Leu Gly Lys Gln Val Leu Ser Tyr Gly Gln Asn Leu	
530 535 540	
tcc ttc tcc ttt cga gtg gac agg cga gat act cgc ctc tct gcc gaa	1680
Ser Phe Ser Phe Arg Val Asp Arg Arg Asp Thr Arg Leu Ser Ala Glu	
545 550 555 560	
gac ctt gtg ctt gag gga gct ggc tta aga gta tct gta ccc ttg atc	1728
Asp Leu Val Leu Glu Gly Ala Gly Leu Arg Val Ser Val Pro Leu Ile	
565 570 575	
gct cag ggc aat tcc tat cca agt gag acc act gtg aag tat gtc ttc	1776
Ala Gln Gly Asn Ser Tyr Pro Ser Glu Thr Thr Val Lys Tyr Val Phe	
580 585 590	
agg ctc cat gaa gca aca gat tac cct tgg agg cct gct ctt acc cct	1824
Arg Leu His Glu Ala Thr Asp Tyr Pro Trp Arg Pro Ala Leu Thr Pro	
595 600 605	
ttt gaa ttt cag aag ctc cta aac aac ttg acc tct atc aag ata cgt	1872
Phe Glu Phe Gln Lys Leu Leu Asn Asn Leu Thr Ser Ile Lys Ile Arg	
610 615 620	
ggg aca tac agt gag aga agt gct gga tat ttg gat gat gtc acc ctg	1920
Gly Thr Tyr Ser Glu Arg Ser Ala Gly Tyr Leu Asp Asp Val Thr Leu	
625 630 635 640	
gca agt gct cgt cct ggg cct gga gtc cct gca act tgg gtg gag tcc	1968
Ala Ser Ala Arg Pro Gly Pro Gly Val Pro Ala Thr Trp Val Glu Ser	
645 650 655	
tgc acc tgt cct gtg gga tat gga ggg cag ttt tgt gag atg tgc ctc	2016
Cys Thr Cys Pro Val Gly Tyr Gly Gly Gln Phe Cys Glu Met Cys Leu	
660 665 670	
tca ggt tac aga aga gaa act cct aat ctt gga cca tac agt cca tgt	2064
Ser Gly Tyr Arg Arg Glu Thr Pro Asn Leu Gly Pro Tyr Ser Pro Cys	
675 680 685	
gtg ctt tgc gcc tgc aat gga cac agc gag acc tgt gat cct gag aca	2112
Val Leu Cys Ala Cys Asn Gly His Ser Glu Thr Cys Asp Pro Glu Thr	
690 695 700	
ggt gtt tgt aac tgc aga gac aat acg gct ggc ccg cac tgt gag aag	2160
Gly Val Cys Asn Cys Arg Asp Asn Thr Ala Gly Pro His Cys Glu Lys	
705 710 715 720	
tgc agt gat ggg tac tat gga gat tca act gca ggc acc tcc tcc gat	2208
Cys Ser Asp Gly Tyr Tyr Gly Asp Ser Thr Ala Gly Thr Ser Ser Asp	
725 730 735	

tgc caa ccc tgt ccg tgt cct gga ggt tca agt tgt gct gtt gtt ccc	2256
Cys Gln Pro Cys Pro Cys Pro Gly Gly Ser Ser Cys Ala Val Val Pro	
740 745 750	
aag aca aag gag gtg gtg tgc acc aac tgt cct act ggc acc act ggt	2304
Lys Thr Lys Glu Val Val Cys Thr Asn Cys Pro Thr Gly Thr Thr Gly	
755 760 765	
aag aga tgt gag ctc tgt gat gat ggc tac ttt gga gac ccc ctg ggt	2352
Lys Arg Cys Glu Leu Cys Asp Asp Gly Tyr Phe Gly Asp Pro Leu Gly	
770 775 780	
aga aac ggc cct gtg aga ctt tgc cgc ctg tgc cag tgc agt gac aac	2400
Arg Asn Gly Pro Val Arg Leu Cys Arg Leu Cys Gln Cys Ser Asp Asn	
785 790 795 800	
atc gat ccc aac gca gtt gga aat tgc aat cgc ttg acg gga gaa tgc	2448
Ile Asp Pro Asn Ala Val Gly Asn Cys Asn Arg Leu Thr Gly Glu Cys	
805 810 815	
ctg aag tgc atc tat aac act gct ggc ttc tat tgt gac cgg tgc aaa	2496
Leu Lys Cys Ile Tyr Asn Thr Ala Gly Phe Tyr Cys Asp Arg Cys Lys	
820 825 830	
gac gga ttt ttt gga aat ccc ctg gct ccc aat cca gca gac aaa tgc	2544
Asp Gly Phe Phe Gly Asn Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys	
835 840 845	
aaa gcc tgc aat tgc aat ccg tat ggg acc atg aag cag cag agc agc	2592
Lys Ala Cys Asn Cys Asn Pro Tyr Gly Thr Met Lys Gln Gln Ser Ser	
850 855 860	
tgt aac ccc gtg acg ggg cag tgt gaa tgt ttg cct cac gtg act ggc	2640
Cys Asn Pro Val Thr Gly Gln Cys Glu Cys Leu Pro His Val Thr Gly	
865 870 875 880	
cag gac tgt ggt gct tgt gac cct gga ttc tac aat ctg cag agt ggg	2688
Gln Asp Cys Gly Ala Cys Asp Pro Gly Phe Tyr Asn Leu Gln Ser Gly	
885 890 895	
caa ggc tgt gag agg tgt gac tgc cat gcc ttg ggc tcc acc aat ggg	2736
Gln Gly Cys Glu Arg Cys Asp Cys His Ala Leu Gly Ser Thr Asn Gly	
900 905 910	
cag tgt gac atc cgc acc ggc cag tgt gag tgc cag ccc ggc atc act	2784
Gln Cys Asp Ile Arg Thr Gly Gln Cys Glu Cys Gln Pro Gly Ile Thr	
915 920 925	
ggt cag cac tgt gag cgc tgt gag gtc aac cac ttt ggg ttt gga cct	2832
Gly Gln His Cys Glu Arg Cys Glu Val Asn His Phe Gly Phe Gly Pro	
930 935 940	
gaa ggc tgc aaa ccc tgt gac tgt cat cct gag gga tct ctt tca ctt	2880
Glu Gly Cys Lys Pro Cys Asp Cys His Pro Glu Gly Ser Leu Ser Leu	
945 950 955 960	
cag tgc aaa gat gat ggt cgc tgt gaa tgc aga gaa ggc ttt gtg gga	2928
Gln Cys Lys Asp Asp Gly Arg Cys Glu Cys Arg Glu Gly Phe Val Gly	
965 970 975	
aat cgc tgt gac cag tgt gaa gaa aac tat ttc tac aat cgg tct tgg	2976

Asn Arg Cys Asp Gln Cys Glu Glu Asn Tyr Phe Tyr Asn Arg Ser Trp	
980 985 990	
cct ggc tgc cag gaa tgt cca gct tgt tac cgg ctg gta aag gat aag	3024
Pro Gly Cys Gln Glu Cys Pro Ala Cys Tyr Arg Leu Val Lys Asp Lys	
995 1000 1005	
gtt gct gat cat aga gtg aag ctc cag gaa tta gag agt ctc ata gca	3072
Val Ala Asp His Arg Val Lys Leu Gln Glu Leu Glu Ser Leu Ile Ala	
1010 1015 1020	
aac ctt gga act ggg gat gag atg gtg aca gat caa gcc ttc gag gat	3120
Asn Leu Gly Thr Gly Asp Glu Met Val Thr Asp Gln Ala Phe Glu Asp	
1025 1030 1035 1040	
aga cta aag gaa gca gag agg gaa gtt atg gac ctc ctt cgt gag gcc	3168
Arg Leu Lys Glu Ala Glu Arg Glu Val Met Asp Leu Leu Arg Glu Ala	
1045 1050 1055	
cag gat gtc aaa gat gtt gac cag aat ttg atg gat cgc cta cag aga	3216
Gln Asp Val Lys Asp Val Asp Gln Asn Leu Met Asp Arg Leu Gln Arg	
1060 1065 1070	
gtg aat aac act ctg tcc agc caa att agc cgt tta cag aat atc cgg	3264
Val Asn Asn Thr Leu Ser Ser Gln Ile Ser Arg Leu Gln Asn Ile Arg	
1075 1080 1085	
aat acc att gaa gag act gga aac ttg gct gaa caa gcg cgt gcc cat	3312
Asn Thr Ile Glu Glu Thr Gly Asn Leu Ala Glu Gln Ala Arg Ala His	
1090 1095 1100	
gta gag aac aca gag cgg ttg att gaa atc gca tcc aga gaa ctt gag	3360
Val Glu Asn Thr Glu Arg Leu Ile Glu Ile Ala Ser Arg Glu Leu Glu	
1105 1110 1115 1120	
aaa gca aaa gtc gct gct gcc aat gtg tca gtc act cag cca gaa tct	3408
Lys Ala Lys Val Ala Ala Ala Asn Val Ser Val Thr Gln Pro Glu Ser	
1125 1130 1135	
aca ggg gac cca aac aac atg act ctt ttg gca gaa gag gct cga aag	3456
Thr Gly Asp Pro Asn Asn Met Thr Leu Leu Ala Glu Glu Ala Arg Lys	
1140 1145 1150	
ctt gct gaa cgt cat aaa cag gaa gct gat gac att gtt cga gtg gca	3504
Leu Ala Glu Arg His Lys Gln Glu Ala Asp Asp Ile Val Arg Val Ala	
1155 1160 1165	
aag aca gcc aat gat acg tca act gag gca tac aac ctg ctt ctg agg	3552
Lys Thr Ala Asn Asp Thr Ser Thr Glu Ala Tyr Asn Leu Leu Leu Arg	
1170 1175 1180	
aca ctg gca gga gaa aat caa aca gca ttt gag att gaa gag ctt aat	3600
Thr Leu Ala Gly Glu Asn Gln Thr Ala Phe Glu Ile Glu Glu Leu Asn	
1185 1190 1195 1200	
agg aag tat gaa caa gcg aag aac atc tca cag gat ctg gaa aaa caa	3648
Arg Lys Tyr Glu Gln Ala Lys Asn Ile Ser Gln Asp Leu Glu Lys Gln	
1205 1210 1215	
gct gcc cga gta cat gag gag gcc aaa agg gcc ggt gac aaa gct gtg	3696
Ala Ala Arg Val His Glu Glu Ala Lys Arg Ala Gly Asp Lys Ala Val	

1220	1225	1230	
gag atc tat gcc agc gtg gct cag ctg agc cct ttg gac tct gag aca Glu Ile Tyr Ala Ser Val Ala Gln Leu Ser Pro Leu Asp Ser Glu Thr 1235 1240 1245			3744
ctg gag aat gaa gca aat aac ata aag atg gaa gct gag aat ctg gaa Leu Glu Asn Glu Ala Asn Asn Ile Lys Met Glu Ala Glu Asn Leu Glu 1250 1255 1260			3792
caa ctg att gac cag aaa tta aaa gat tat gag gac ctc aga gaa gat Gln Leu Ile Asp Gln Lys Leu Lys Asp Tyr Glu Asp Leu Arg Glu Asp 1265 1270 1275 1280			3840
atg aga ggg aag gaa ctt gaa gtc aag aac ctt ctg gag aaa ggc aag Met Arg Gly Lys Glu Leu Glu Val Lys Asn Leu Leu Glu Lys Gly Lys 1285 1290 1295			3888
act gaa cag cag acc gca gac caa ctc cta gcc cga gct gat gct gcc Thr Glu Gln Gln Thr Ala Asp Gln Leu Leu Ala Arg Ala Asp Ala Ala 1300 1305 1310			3936
aag gcc ctc gct gaa gaa gct gca aag aag gga cgg gat acc tta caa Lys Ala Leu Ala Glu Glu Ala Ala Lys Lys Gly Arg Asp Thr Leu Gln 1315 1320 1325			3984
gaa gct aat gac att ctc aac aac ctg aaa gat ttt gat agg cgc gtg Glu Ala Asn Asp Ile Leu Asn Asn Leu Lys Asp Phe Asp Arg Arg Val 1330 1335 1340			4032
aac gat aac aag acg gcc gca gag gag gca cta agg aag att cct gcc Asn Asp Asn Lys Thr Ala Ala Glu Glu Ala Leu Arg Lys Ile Pro Ala 1345 1350 1355 1360			4080
atc aac cag acc atc act gaa gcc aat gaa aag acc aga gaa gcc cag Ile Asn Gln Thr Ile Thr Glu Ala Asn Glu Lys Thr Arg Glu Ala Gln 1365 1370 1375			4128
cag gcc ctg ggc agt gct gcg gcg gat gcc aca gag gcc aag aac aag Gln Ala Leu Gly Ser Ala Ala Ala Asp Ala Thr Glu Ala Lys Asn Lys 1380 1385 1390			4176
gcc cat gag gcg gag agg atc gca agc gct gtc caa aag aat gcc acc Ala His Glu Ala Glu Arg Ile Ala Ser Ala Val Gln Lys Asn Ala Thr 1395 1400 1405			4224
agc acc aag gca gaa gct gaa aga act ttt gca gaa gtt aca gat ctg Ser Thr Lys Ala Glu Ala Glu Arg Thr Phe Ala Glu Val Thr Asp Leu 1410 1415 1420			4272
gat aat gag gtg aac aat atg ttg aag caa ctg cag gaa gca gaa aaa Asp Asn Glu Val Asn Asn Met Leu Lys Gln Leu Gln Glu Ala Glu Lys 1425 1430 1435 1440			4320
gag cta aag aga aaa caa gat gac gct gac cag gac atg atg atg gca Glu Leu Lys Arg Lys Gln Asp Asp Ala Asp Gln Asp Met Met Met Ala 1445 1450 1455			4368
ggg atg gct tca cag gct gct caa gaa gcc gag atc aat gcc aga aaa Gly Met Ala Ser Gln Ala Ala Gln Glu Ala Glu Ile Asn Ala Arg Lys 1460 1465 1470			4416

```

gcc aaa aac tct gtt act agc ctc ctc agc att att aat gac ctc ttg 4464
Ala Lys Asn Ser Val Thr Ser Leu Leu Ser Ile Ile Asn Asp Leu Leu
      1475                1480                1485

gag cag ctg ggg cag ctg gat aca gtg gac ctg aat aag cta aac gag 4512
Glu Gln Leu Gly Gln Leu Asp Thr Val Asp Leu Asn Lys Leu Asn Glu
      1490                1495                1500

att gaa ggc acc cta aac aaa gcc aaa gat gaa atg aag gtc agc gat 4560
Ile Glu Gly Thr Leu Asn Lys Ala Lys Asp Glu Met Lys Val Ser Asp
1505                1510                1515                1520

ctt gat agg aaa gtg tct gac ctg gag aat gaa gcc aag aag cag gag 4608
Leu Asp Arg Lys Val Ser Asp Leu Glu Asn Glu Ala Lys Lys Gln Glu
      1525                1530                1535

gct gcc atc atg gac tat aac cga gat atc gag gag atc atg aag gac 4656
Ala Ala Ile Met Asp Tyr Asn Arg Asp Ile Glu Glu Ile Met Lys Asp
      1540                1545                1550

att cgc aat ctg gag gac atc agg aag acc tta cca tct ggc tgc ttc 4704
Ile Arg Asn Leu Glu Asp Ile Arg Lys Thr Leu Pro Ser Gly Cys Phe
      1555                1560                1565

aac acc ccg tcc att gaa aag ccc tagtgtcttt agggctggaa ggcagcatcc 4758
Asn Thr Pro Ser Ile Glu Lys Pro
      1570                1575

ctctgacagg ggggcagttg tgaggccaca gagtgccttg acacaaagat tacatttttc 4818

agacccccac tcctctgctg ctgtccatca ctgtcctttt gaaccaggaa aagtcacaga 4878

gtttaaagag aagcaaatta aacatcctga atcggaaca aagggtttta tctaataaag 4938

tgtctcttcc 4948

<210> 16
<211> 1576
<212> PRT
<213> Homo sapiens

<400> 16
Gln Ala Ala Met Asp Glu Cys Thr Asp Glu Gly Gly Arg Pro Gln Arg
  1              5              10              15

Cys Met Pro Glu Phe Val Asn Ala Ala Phe Asn Val Thr Val Val Ala
      20              25              30

Thr Asn Thr Cys Gly Thr Pro Pro Glu Glu Tyr Cys Val Gln Thr Gly
      35              40              45

Val Thr Gly Val Thr Lys Ser Cys His Leu Cys Asp Ala Gly Gln Pro
      50              55              60

His Leu Gln His Gly Ala Ala Phe Leu Thr Asp Tyr Asn Asn Gln Ala
      65              70              75              80

Asp Thr Thr Trp Trp Gln Ser Gln Thr Met Leu Ala Gly Val Gln Tyr
      85              90              95

```

Pro	Ser	Ser	Ile	Asn	Leu	Thr	Leu	His	Leu	Gly	Lys	Ala	Phe	Asp	Ile	100	105	110
Thr	Tyr	Val	Arg	Leu	Lys	Phe	His	Thr	Ser	Arg	Pro	Glu	Ser	Phe	Ala	115	120	125
Ile	Tyr	Lys	Arg	Thr	Arg	Glu	Asp	Gly	Pro	Trp	Ile	Pro	Tyr	Gln	Tyr	130	135	140
Tyr	Ser	Gly	Ser	Cys	Glu	Asn	Thr	Tyr	Ser	Lys	Ala	Asn	Arg	Gly	Phe	145	150	155
Ile	Arg	Thr	Gly	Gly	Asp	Glu	Gln	Gln	Ala	Leu	Cys	Thr	Asp	Glu	Phe	165	170	175
Ser	Asp	Ile	Ser	Pro	Leu	Thr	Gly	Gly	Asn	Val	Ala	Phe	Ser	Thr	Leu	180	185	190
Glu	Gly	Arg	Pro	Ser	Ala	Tyr	Asn	Phe	Asp	Asn	Ser	Pro	Val	Leu	Gln	195	200	205
Glu	Trp	Val	Thr	Ala	Thr	Asp	Ile	Arg	Val	Thr	Leu	Asn	Arg	Leu	Asn	210	215	220
Thr	Phe	Gly	Asp	Glu	Val	Phe	Asn	Asp	Pro	Lys	Val	Leu	Lys	Ser	Tyr	225	230	235
Tyr	Tyr	Ala	Ile	Ser	Asp	Phe	Ala	Val	Gly	Gly	Arg	Cys	Lys	Cys	Asn	245	250	255
Gly	His	Ala	Ser	Glu	Cys	Met	Lys	Asn	Glu	Phe	Asp	Lys	Leu	Val	Cys	260	265	270
Asn	Cys	Lys	His	Asn	Thr	Tyr	Gly	Val	Asp	Cys	Glu	Lys	Cys	Leu	Pro	275	280	285
Phe	Phe	Asn	Asp	Arg	Pro	Trp	Arg	Arg	Ala	Thr	Ala	Glu	Ser	Ala	Ser	290	295	300
Glu	Cys	Leu	Pro	Cys	Asp	Cys	Asn	Gly	Arg	Ser	Gln	Glu	Cys	Tyr	Phe	305	310	315
Asp	Pro	Glu	Leu	Tyr	Arg	Ser	Thr	Gly	His	Gly	Gly	His	Cys	Thr	Asn	325	330	335
Cys	Gln	Asp	Asn	Thr	Asp	Gly	Ala	His	Cys	Glu	Arg	Cys	Arg	Glu	Asn	340	345	350
Phe	Phe	Arg	Leu	Gly	Asn	Asn	Glu	Ala	Cys	Ser	Ser	Cys	His	Cys	Ser	355	360	365
Pro	Val	Gly	Ser	Leu	Ser	Thr	Gln	Cys	Asp	Ser	Tyr	Gly	Arg	Cys	Ser	370	375	380
Cys	Lys	Pro	Gly	Val	Met	Gly	Asp	Lys	Cys	Asp	Arg	Cys	Gln	Pro	Gly	385	390	395
Phe	His	Ser	Leu	Thr	Glu	Ala	Gly	Cys	Arg	Pro	Cys	Ser	Cys	Asp	Pro	405	410	415

Ser	Gly	Ser	Ile	Asp	Glu	Cys	Asn	Val	Glu	Thr	Gly	Arg	Cys	Val	Cys		
			420					425						430			
Lys	Asp	Asn	Val	Glu	Gly	Phe	Asn	Cys	Glu	Arg	Cys	Lys	Pro	Gly	Phe		
			435					440					445				
Phe	Asn	Leu	Glu	Ser	Ser	Asn	Pro	Arg	Gly	Cys	Thr	Pro	Cys	Phe	Cys		
			450				455					460					
Phe	Gly	His	Ser	Ser	Val	Cys	Thr	Asn	Ala	Val	Gly	Tyr	Ser	Val	Tyr		
			465			470				475					480		
Ser	Ile	Ser	Ser	Thr	Phe	Gln	Ile	Asp	Glu	Asp	Gly	Trp	Arg	Ala	Glu		
				485					490						495		
Gln	Arg	Asp	Gly	Ser	Glu	Ala	Ser	Leu	Glu	Trp	Ser	Ser	Glu	Arg	Gln		
			500					505					510				
Asp	Ile	Ala	Val	Ile	Ser	Asp	Ser	Tyr	Phe	Pro	Arg	Tyr	Phe	Ile	Ala		
			515					520					525				
Pro	Ala	Lys	Phe	Leu	Gly	Lys	Gln	Val	Leu	Ser	Tyr	Gly	Gln	Asn	Leu		
			530				535					540					
Ser	Phe	Ser	Phe	Arg	Val	Asp	Arg	Arg	Asp	Thr	Arg	Leu	Ser	Ala	Glu		
					550					555					560		
Asp	Leu	Val	Leu	Glu	Gly	Ala	Gly	Leu	Arg	Val	Ser	Val	Pro	Leu	Ile		
				565					570					575			
Ala	Gln	Gly	Asn	Ser	Tyr	Pro	Ser	Glu	Thr	Thr	Val	Lys	Tyr	Val	Phe		
			580					585						590			
Arg	Leu	His	Glu	Ala	Thr	Asp	Tyr	Pro	Trp	Arg	Pro	Ala	Leu	Thr	Pro		
			595				600					605					
Phe	Glu	Phe	Gln	Lys	Leu	Leu	Asn	Asn	Leu	Thr	Ser	Ile	Lys	Ile	Arg		
			610				615					620					
Gly	Thr	Tyr	Ser	Glu	Arg	Ser	Ala	Gly	Tyr	Leu	Asp	Asp	Val	Thr	Leu		
					630					635					640		
Ala	Ser	Ala	Arg	Pro	Gly	Pro	Gly	Val	Pro	Ala	Thr	Trp	Val	Glu	Ser		
				645					650					655			
Cys	Thr	Cys	Pro	Val	Gly	Tyr	Gly	Gly	Gln	Phe	Cys	Glu	Met	Cys	Leu		
			660					665					670				
Ser	Gly	Tyr	Arg	Arg	Glu	Thr	Pro	Asn	Leu	Gly	Pro	Tyr	Ser	Pro	Cys		
			675				680						685				
Val	Leu	Cys	Ala	Cys	Asn	Gly	His	Ser	Glu	Thr	Cys	Asp	Pro	Glu	Thr		
			690				695					700					
Gly	Val	Cys	Asn	Cys	Arg	Asp	Asn	Thr	Ala	Gly	Pro	His	Cys	Glu	Lys		
					710					715					720		
Cys	Ser	Asp	Gly	Tyr	Tyr	Gly	Asp	Ser	Thr	Ala	Gly	Thr	Ser	Ser	Asp		
				725					730					735			
Cys	Gln	Pro	Cys	Pro	Cys	Pro	Gly	Gly	Ser	Ser	Cys	Ala	Val	Val	Pro		



740					745					750				
Lys Thr Lys Glu Val Val Cys Thr Asn Cys Pro Thr Gly Thr Thr Gly	755					760					765			
Lys Arg Cys Glu Leu Cys Asp Asp Gly Tyr Phe Gly Asp Pro Leu Gly	770					775					780			
Arg Asn Gly Pro Val Arg Leu Cys Arg Leu Cys Gln Cys Ser Asp Asn	785				790				795					800
Ile Asp Pro Asn Ala Val Gly Asn Cys Asn Arg Leu Thr Gly Glu Cys			805					810					815	
Leu Lys Cys Ile Tyr Asn Thr Ala Gly Phe Tyr Cys Asp Arg Cys Lys			820				825					830		
Asp Gly Phe Phe Gly Asn Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys			835				840					845		
Lys Ala Cys Asn Cys Asn Pro Tyr Gly Thr Met Lys Gln Gln Ser Ser			850				855					860		
Cys Asn Pro Val Thr Gly Gln Cys Glu Cys Leu Pro His Val Thr Gly			865			870				875				880
Gln Asp Cys Gly Ala Cys Asp Pro Gly Phe Tyr Asn Leu Gln Ser Gly				885					890					895
Gln Gly Cys Glu Arg Cys Asp Cys His Ala Leu Gly Ser Thr Asn Gly				900				905						910
Gln Cys Asp Ile Arg Thr Gly Gln Cys Glu Cys Gln Pro Gly Ile Thr				915				920						925
Gly Gln His Cys Glu Arg Cys Glu Val Asn His Phe Gly Phe Gly Pro				930			935				940			
Glu Gly Cys Lys Pro Cys Asp Cys His Pro Glu Gly Ser Leu Ser Leu				945			950			955				960
Gln Cys Lys Asp Asp Gly Arg Cys Glu Cys Arg Glu Gly Phe Val Gly				965				970						975
Asn Arg Cys Asp Gln Cys Glu Glu Asn Tyr Phe Tyr Asn Arg Ser Trp				980				985						990
Pro Gly Cys Gln Glu Cys Pro Ala Cys Tyr Arg Leu Val Lys Asp Lys				995			1000							1005
Val Ala Asp His Arg Val Lys Leu Gln Glu Leu Glu Ser Leu Ile Ala				1010				1015						1020
Asn Leu Gly Thr Gly Asp Glu Met Val Thr Asp Gln Ala Phe Glu Asp				1025			1030			1035				1040
Arg Leu Lys Glu Ala Glu Arg Glu Val Met Asp Leu Leu Arg Glu Ala				1045				1050						1055
Gln Asp Val Lys Asp Val Asp Gln Asn Leu Met Asp Arg Leu Gln Arg				1060				1065						1070

Val Asn Asn Thr Leu Ser Ser Gln Ile Ser Arg Leu Gln Asn Ile Arg  
1075 1080 1085

Asn Thr Ile Glu Glu Thr Gly Asn Leu Ala Glu Gln Ala Arg Ala His  
1090 1095 1100

Val Glu Asn Thr Glu Arg Leu Ile Glu Ile Ala Ser Arg Glu Leu Glu  
1105 1110 1115 1120

Lys Ala Lys Val Ala Ala Ala Asn Val Ser Val Thr Gln Pro Glu Ser  
1125 1130 1135

Thr Gly Asp Pro Asn Asn Met Thr Leu Leu Ala Glu Glu Ala Arg Lys  
1140 1145 1150

Leu Ala Glu Arg His Lys Gln Glu Ala Asp Asp Ile Val Arg Val Ala  
1155 1160 1165

Lys Thr Ala Asn Asp Thr Ser Thr Glu Ala Tyr Asn Leu Leu Leu Arg  
1170 1175 1180

Thr Leu Ala Gly Glu Asn Gln Thr Ala Phe Glu Ile Glu Glu Leu Asn  
1185 1190 1195 1200

Arg Lys Tyr Glu Gln Ala Lys Asn Ile Ser Gln Asp Leu Glu Lys Gln  
1205 1210 1215

Ala Ala Arg Val His Glu Glu Ala Lys Arg Ala Gly Asp Lys Ala Val  
1220 1225 1230

Glu Ile Tyr Ala Ser Val Ala Gln Leu Ser Pro Leu Asp Ser Glu Thr  
1235 1240 1245

Leu Glu Asn Glu Ala Asn Asn Ile Lys Met Glu Ala Glu Asn Leu Glu  
1250 1255 1260

Gln Leu Ile Asp Gln Lys Leu Lys Asp Tyr Glu Asp Leu Arg Glu Asp  
1265 1270 1275 1280

Met Arg Gly Lys Glu Leu Glu Val Lys Asn Leu Leu Glu Lys Gly Lys  
1285 1290 1295

Thr Glu Gln Gln Thr Ala Asp Gln Leu Leu Ala Arg Ala Asp Ala Ala  
1300 1305 1310

Lys Ala Leu Ala Glu Glu Ala Ala Lys Lys Gly Arg Asp Thr Leu Gln  
1315 1320 1325

Glu Ala Asn Asp Ile Leu Asn Asn Leu Lys Asp Phe Asp Arg Arg Val  
1330 1335 1340

Asn Asp Asn Lys Thr Ala Ala Glu Glu Ala Leu Arg Lys Ile Pro Ala  
1345 1350 1355 1360

Ile Asn Gln Thr Ile Thr Glu Ala Asn Glu Lys Thr Arg Glu Ala Gln  
1365 1370 1375

Gln Ala Leu Gly Ser Ala Ala Ala Asp Ala Thr Glu Ala Lys Asn Lys  
1380 1385 1390

Ala His Glu Ala Glu Arg Ile Ala Ser Ala Val Gln Lys Asn Ala Thr  
1395 1400 1405

Ser Thr Lys Ala Glu Ala Glu Arg Thr Phe Ala Glu Val Thr Asp Leu  
1410 1415 1420

Asp Asn Glu Val Asn Asn Met Leu Lys Gln Leu Gln Glu Ala Glu Lys  
1425 1430 1435 1440

Glu Leu Lys Arg Lys Gln Asp Asp Ala Asp Gln Asp Met Met Met Ala  
1445 1450 1455

Gly Met Ala Ser Gln Ala Ala Gln Glu Ala Glu Ile Asn Ala Arg Lys  
1460 1465 1470

Ala Lys Asn Ser Val Thr Ser Leu Leu Ser Ile Ile Asn Asp Leu Leu  
1475 1480 1485

Glu Gln Leu Gly Gln Leu Asp Thr Val Asp Leu Asn Lys Leu Asn Glu  
1490 1495 1500

Ile Glu Gly Thr Leu Asn Lys Ala Lys Asp Glu Met Lys Val Ser Asp  
1505 1510 1515 1520

Leu Asp Arg Lys Val Ser Asp Leu Glu Asn Glu Ala Lys Lys Gln Glu  
1525 1530 1535

Ala Ala Ile Met Asp Tyr Asn Arg Asp Ile Glu Glu Ile Met Lys Asp  
1540 1545 1550

Ile Arg Asn Leu Glu Asp Ile Arg Lys Thr Leu Pro Ser Gly Cys Phe  
1555 1560 1565

Asn Thr Pro Ser Ile Glu Lys Pro  
1570 1575

<210> 17  
<211> 7554  
<212> DNA  
<213> Mus musculus

<220>  
<221> CDS  
<222> (193)..(5007)

<220>  
<221> sig\_peptide  
<222> (193)..(291)

<400> 17  
cgccacggga agtagcggag gcagcgcat cttggctcgg acgcccaccc atcggctctg 60  
cgtccggctc tcggcctcca gcccggtcca cagcccggcc tcggcccgca gcggaggatc 120  
ggcctcggga tacgccgcta ggcgagtga gcgcggcacc ccagcctttg ccgagggggc 180  
cgccgcagcg gg atg acg ggc ggc ggc cgg gcc gcg ctg gcc ctg cag ccc 231  
Met Thr Gly Gly Gly Arg Ala Ala Leu Ala Leu Gln Pro  
1 5 10

cgg ggg cgg ctg tgg ccg ctg ttg gct gtg ctg gcg gct gtg gcg ggc	279
Arg Gly Arg Leu Trp Pro Leu Leu Ala Val Leu Ala Ala Val Ala Gly	
15 20 25	
tgt gtc cgg gcg gcc atg gac gag tgc gcg gat gag ggc ggg cgg ccg	327
Cys Val Arg Ala Ala Met Asp Glu Cys Ala Asp Glu Gly Gly Arg Pro	
30 35 40 45	
cag cgc tgc atg ccg gag ttt gtt aat gcc gcc ttc aat gtg acc gtg	375
Gln Arg Cys Met Pro Glu Phe Val Asn Ala Ala Phe Asn Val Thr Val	
50 55 60	
gtg gct acc aac acg tgt ggg act ccg ccc gag gag tac tgc gtg cag	423
Val Ala Thr Asn Thr Cys Gly Thr Pro Pro Glu Glu Tyr Cys Val Gln	
65 70 75	
act ggg gtg acc gga gtc act aag tcc tgt cac ctg tgc gac gcc ggc	471
Thr Gly Val Thr Gly Val Thr Lys Ser Cys His Leu Cys Asp Ala Gly	
80 85 90	
cag cag cac ctg caa cac ggg gca gcc ttc ctg acc gac tac aac aac	519
Gln Gln His Leu Gln His Gly Ala Ala Phe Leu Thr Asp Tyr Asn Asn	
95 100 105	
cag gcc gac acc acc tgg tgg caa agc cag act atg ctg gcc ggg gtg	567
Gln Ala Asp Thr Thr Trp Trp Gln Ser Gln Thr Met Leu Ala Gly Val	
110 115 120 125	
cag tac ccc aac tcc atc aac ctc acg ctg cac ctg gga aag gct ttt	615
Gln Tyr Pro Asn Ser Ile Asn Leu Thr Leu His Leu Gly Lys Ala Phe	
130 135 140	
gac atc act tac gtg cgc ctc aag ttc cac acc agc cgt cca gag agc	663
Asp Ile Thr Tyr Val Arg Leu Lys Phe His Thr Ser Arg Pro Glu Ser	
145 150 155	
ttc gcc atc tat aag cgc act cgg gaa gac ggg ccc tgg att cct tat	711
Phe Ala Ile Tyr Lys Arg Thr Arg Glu Asp Gly Pro Trp Ile Pro Tyr	
160 165 170	
cag tac tac agt ggg tcc tgt gag aac acg tac tca aag gct aac cgt	759
Gln Tyr Tyr Ser Gly Ser Cys Glu Asn Thr Tyr Ser Lys Ala Asn Arg	
175 180 185	
ggc ttc atc agg acc gga ggg gac gag cag cag gcc ttg tgt act gat	807
Gly Phe Ile Arg Thr Gly Gly Asp Glu Gln Gln Ala Leu Cys Thr Asp	
190 195 200 205	
gaa ttc agt gac att tcc ccc ctc acc ggt ggc aac gtg gcc ttt tca	855
Glu Phe Ser Asp Ile Ser Pro Leu Thr Gly Gly Asn Val Ala Phe Ser	
210 215 220	
acc ctg gaa gga cgg ccg agt gcc tac aac ttt gac aac agc cct gtg	903
Thr Leu Glu Gly Arg Pro Ser Ala Tyr Asn Phe Asp Asn Ser Pro Val	
225 230 235	
ctc cag gaa tgg gta act gcc act gac atc aga gtg acg ctc aat cgc	951
Leu Gln Glu Trp Val Thr Ala Thr Asp Ile Arg Val Thr Leu Asn Arg	
240 245 250	
ctg aac acc ttt gga gat gaa gtg ttt aac gac ccc aaa gtt ctc aag	999

Leu	Asn	Thr	Phe	Gly	Asp	Glu	Val	Phe	Asn	Asp	Pro	Lys	Val	Leu	Lys	
255						260					265					
tct	tac	tat	tac	gca	atc	tca	gac	ttt	gct	gtg	ggc	ggc	agg	tgt	aaa	1047
Ser	Tyr	Tyr	Tyr	Ala	Ile	Ser	Asp	Phe	Ala	Val	Gly	Gly	Arg	Cys	Lys	
270					275				280						285	
tgt	aac	gga	cat	gcc	agc	gag	tgt	gta	aag	aac	gag	ttt	gac	aaa	ctc	1095
Cys	Asn	Gly	His	Ala	Ser	Glu	Cys	Val	Lys	Asn	Glu	Phe	Asp	Lys	Leu	
				290					295					300		
atg	tgc	aac	tgc	aaa	cat	aac	aca	tac	gga	gtt	gac	tgt	gaa	aag	tgc	1143
Met	Cys	Asn	Cys	Lys	His	Asn	Thr	Tyr	Gly	Val	Asp	Cys	Glu	Lys	Cys	
			305					310					315			
ctg	cct	ttc	ttc	aat	gac	cgg	cgg	tgg	agg	agg	gcg	act	gct	gag	agc	1191
Leu	Pro	Phe	Phe	Asn	Asp	Arg	Pro	Trp	Arg	Arg	Ala	Thr	Ala	Glu	Ser	
		320					325						330			
gcc	agc	gag	tgc	ctt	cct	tgt	gac	tgc	aat	ggc	cga	tcc	caa	gag	tgc	1239
Ala	Ser	Glu	Cys	Leu	Pro	Cys	Asp	Cys	Asn	Gly	Arg	Ser	Gln	Glu	Cys	
	335					340					345					
tac	ttt	gat	cct	gaa	cta	tac	cgt	tcc	act	gga	cat	ggg	ggc	cac	tgt	1287
Tyr	Phe	Asp	Pro	Glu	Leu	Tyr	Arg	Ser	Thr	Gly	His	Gly	Gly	His	Cys	
350					355					360					365	
acc	aac	tgc	cgg	gat	aac	aca	gat	ggg	gcc	aag	tgc	gag	agg	tgc	cgg	1335
Thr	Asn	Cys	Arg	Asp	Asn	Thr	Asp	Gly	Ala	Lys	Cys	Glu	Arg	Cys	Arg	
				370					375					380		
gag	aat	ttc	ttc	cgc	ctg	ggg	aac	act	gaa	gcc	tgc	tct	cgg	tgc	cac	1383
Glu	Asn	Phe	Phe	Arg	Leu	Gly	Asn	Thr	Glu	Ala	Cys	Ser	Pro	Cys	His	
			385					390					395			
tgc	agc	cct	gtt	ggg	tct	ctc	agc	aca	cag	tgt	gac	agt	tac	ggc	aga	1431
Cys	Ser	Pro	Val	Gly	Ser	Leu	Ser	Thr	Gln	Cys	Asp	Ser	Tyr	Gly	Arg	
		400				405						410				
tgc	agc	tgt	aag	cca	gga	gtg	atg	ggg	gac	aag	tgt	gac	cgt	tgt	cag	1479
Cys	Ser	Cys	Lys	Pro	Gly	Val	Met	Gly	Asp	Lys	Cys	Asp	Arg	Cys	Gln	
	415					420					425					
cct	ggg	ttc	cat	tcc	ctc	act	gag	gca	gga	tgc	agg	cca	tgc	tcc	tgc	1527
Pro	Gly	Phe	His	Ser	Leu	Thr	Glu	Ala	Gly	Cys	Arg	Pro	Cys	Ser	Cys	
430					435					440					445	
gat	cct	tcg	ggc	agc	aca	gac	gag	tgt	aat	gtt	gaa	aca	gga	aga	tgc	1575
Asp	Pro	Ser	Gly	Ser	Thr	Asp	Glu	Cys	Asn	Val	Glu	Thr	Gly	Arg	Cys	
				450					455					460		
gtt	tgc	aaa	gac	aat	gtt	gaa	ggc	ttc	aac	tgt	gag	aga	tgc	aaa	cct	1623
Val	Cys	Lys	Asp	Asn	Val	Glu	Gly	Phe	Asn	Cys	Glu	Arg	Cys	Lys	Pro	
			465					470					475			
gga	ttt	ttt	aat	ctg	gag	tca	tct	aat	cct	aag	ggc	tgc	aca	ccc	tgc	1671
Gly	Phe	Phe	Asn	Leu	Glu	Ser	Ser	Asn	Pro	Lys	Gly	Cys	Thr	Pro	Cys	
		480					485					490				
ttc	tgc	ttt	ggc	cat	tct	tct	gtg	tgc	aca	aat	gct	gtt	ggc	tac	agt	1719
Phe	Cys	Phe	Gly	His	Ser	Ser	Val	Cys	Thr	Asn	Ala	Val	Gly	Tyr	Ser	

495	500	505	
gtt tat gac atc tcc tcc acc ttt cag att gat gag gat ggg tgg cgc			1767
Val Tyr Asp Ile Ser Ser Thr Phe Gln Ile Asp Glu Asp Gly Trp Arg			
510	515	520	525
gtg gag cag aga gat ggc tgc gag gcg tct ctg gag tgg tcc tca gac			1815
Val Glu Gln Arg Asp Gly Ser Glu Ala Ser Leu Glu Trp Ser Ser Asp			
	530	535	540
agg caa tat att gcc gta atc tca gac agt tac ttt cct aga tac ttc			1863
Arg Gln Tyr Ile Ala Val Ile Ser Asp Ser Tyr Phe Pro Arg Tyr Phe			
	545	550	555
atc gcc cct gtg aag ttc ctg ggc aac cag gtc ctg agt tat ggg cag			1911
Ile Ala Pro Val Lys Phe Leu Gly Asn Gln Val Leu Ser Tyr Gly Gln			
	560	565	570
aat ctt tcc ttc tcc ttc cga gtg gac aga cga gac act cgc ctc tcc			1959
Asn Leu Ser Phe Ser Phe Arg Val Asp Arg Arg Asp Thr Arg Leu Ser			
	575	580	585
gca gag gac ctt gtg ctc gaa gga gct ggc ttg aga gta tcc gtg ccc			2007
Ala Glu Asp Leu Val Leu Glu Gly Ala Gly Leu Arg Val Ser Val Pro			
590	595	600	605
ttg atc gct cag ggc aac tcc tac ccc agc gag acc act gtg aag tac			2055
Leu Ile Ala Gln Gly Asn Ser Tyr Pro Ser Glu Thr Thr Val Lys Tyr			
	610	615	620
atc ttc agg ctc cat gaa gca acg gat tac cct tgg agg ccc gct ctc			2103
Ile Phe Arg Leu His Glu Ala Thr Asp Tyr Pro Trp Arg Pro Ala Leu			
	625	630	635
tcc ccg ttt gaa ttt cag aag ctc ctg aac aac ttg acc tct atc aag			2151
Ser Pro Phe Glu Phe Gln Lys Leu Leu Asn Asn Leu Thr Ser Ile Lys			
	640	645	650
atc cgt ggt aca tac agc gag agg agc gct ggg tac ttg gat gat gtc			2199
Ile Arg Gly Thr Tyr Ser Glu Arg Ser Ala Gly Tyr Leu Asp Asp Val			
	655	660	665
acc ttg caa agt gct cgc cct ggg ccc gga gtc cct gca acg tgg gtg			2247
Thr Leu Gln Ser Ala Arg Pro Gly Pro Gly Val Pro Ala Thr Trp Val			
670	675	680	685
gag tcc tgc acc tgt cca gtg gga tac ggg gga cag ttc tgt gag acg			2295
Glu Ser Cys Thr Cys Pro Val Gly Tyr Gly Gly Gln Phe Cys Glu Thr			
	690	695	700
tgc ctc cca ggg tac aga aga gaa act cca agc ctt gga cct tat agc			2343
Cys Leu Pro Gly Tyr Arg Arg Glu Thr Pro Ser Leu Gly Pro Tyr Ser			
	705	710	715
ccg tgt gtg ctc tgt acc tgt aat ggg cac agt gag acc tgt gac ccg			2391
Pro Cys Val Leu Cys Thr Cys Asn Gly His Ser Glu Thr Cys Asp Pro			
	720	725	730
gag aca ggt gtc tgt gac tgc aga gac aat aca gcc ggc ccc cac tgt			2439
Glu Thr Gly Val Cys Asp Cys Arg Asp Asn Thr Ala Gly Pro His Cys			
	735	740	745

gag aaa tgt agc gat ggg tac tat ggg gac tca acc ctg ggc acc tcc	2487
Glu Lys Cys Ser Asp Gly Tyr Tyr Gly Asp Ser Thr Leu Gly Thr Ser	
750 755 760 765	
tct gac tgc cag cct tgt ccc tgc ccc ggt ggc tca agt tgt gcc att	2535
Ser Asp Cys Gln Pro Cys Pro Cys Pro Gly Gly Ser Ser Cys Ala Ile	
770 775 780	
gtc cca aag aca aag gaa gtg gtg tgc acg cac tgt ccg act ggc act	2583
Val Pro Lys Thr Lys Glu Val Val Cys Thr His Cys Pro Thr Gly Thr	
785 790 795	
gcc ggc aag aga tgt gaa ctc tgt gat gac ggc tac ttt gga gac cct	2631
Ala Gly Lys Arg Cys Glu Leu Cys Asp Asp Gly Tyr Phe Gly Asp Pro	
800 805 810	
ctg ggc agc aat ggg ccc gtg aga ctg tgc cgc ccg tgc cag tgt aac	2679
Leu Gly Ser Asn Gly Pro Val Arg Leu Cys Arg Pro Cys Gln Cys Asn	
815 820 825	
gac aac ata gac ccc aac gcg gtt ggc aac tgc aac cgc ctg acg ggc	2727
Asp Asn Ile Asp Pro Asn Ala Val Gly Asn Cys Asn Arg Leu Thr Gly	
830 835 840 845	
gag tgc ctg aag tgc atc tat aac acg gct ggt ttc tac tgc gac cgg	2775
Glu Cys Leu Lys Cys Ile Tyr Asn Thr Ala Gly Phe Tyr Cys Asp Arg	
850 855 860	
tgc aag gaa ggg ttt ttc gga aat ccc ctg gct ccc aat cca gcc gac	2823
Cys Lys Glu Gly Phe Phe Gly Asn Pro Leu Ala Pro Asn Pro Ala Asp	
865 870 875	
aaa tgc aaa gcc tgc gcc tgc aac tac ggg aca gtg cag caa cag agc	2871
Lys Cys Lys Ala Cys Ala Cys Asn Tyr Gly Thr Val Gln Gln Gln Ser	
880 885 890	
agc tgt aac ccg gtg acc gga caa tgc cag tgt ctg cct cat gtg tct	2919
Ser Cys Asn Pro Val Thr Gly Gln Cys Gln Cys Leu Pro His Val Ser	
895 900 905	
ggc cgc gac tgc ggt act tgt gac cct ggc tac tac aac ctg cag agc	2967
Gly Arg Asp Cys Gly Thr Cys Asp Pro Gly Tyr Tyr Asn Leu Gln Ser	
910 915 920 925	
ggg caa ggc tgc gag agg tgt gac tgc cat gct ttg ggt tcc acc aat	3015
Gly Gln Gly Cys Glu Arg Cys Asp Cys His Ala Leu Gly Ser Thr Asn	
930 935 940	
ggg cag tgt gac atc cgc acc ggg cag tgt gag tgc cag cct ggc atc	3063
Gly Gln Cys Asp Ile Arg Thr Gly Gln Cys Glu Cys Gln Pro Gly Ile	
945 950 955	
acc ggt cag cac tgt gag cgc tgt gag acc aac cac ttt ggg ttt gga	3111
Thr Gly Gln His Cys Glu Arg Cys Glu Thr Asn His Phe Gly Phe Gly	
960 965 970	
cct gaa ggc tgc aaa cct tgt gac tgt cac cat gaa gga tcc ctt tcg	3159
Pro Glu Gly Cys Lys Pro Cys Asp Cys His His Glu Gly Ser Leu Ser	
975 980 985	

ctc cag tgt aaa gac gac ggc cgt tgt gaa tgc agg gaa ggc ttt gtg	3207
Leu Gln Cys Lys Asp Asp Gly Arg Cys Glu Cys Arg Glu Gly Phe Val	
990 995 1000 1005	
ggc aat cgc tgt gac cag tgt gaa gag aac tat ttc tac aat cgg tcc	3255
Gly Asn Arg Cys Asp Gln Cys Glu Glu Asn Tyr Phe Tyr Asn Arg Ser	
1010 1015 1020	
tgg cct ggc tgc cag gag tgt ccg gct tgt tac cga ctt gtg aag gat	3303
Trp Pro Gly Cys Gln Glu Cys Pro Ala Cys Tyr Arg Leu Val Lys Asp	
1025 1030 1035	
aag gct gct gag cat cga gtg aaa ctc cag gag tta gag agc ctc atc	3351
Lys Ala Ala Glu His Arg Val Lys Leu Gln Glu Leu Glu Ser Leu Ile	
1040 1045 1050	
gcc aac ctt ggc act ggg gat gac atg gtg aca gat caa gcc ttt gag	3399
Ala Asn Leu Gly Thr Gly Asp Asp Met Val Thr Asp Gln Ala Phe Glu	
1055 1060 1065	
gac aga ctt aag gaa gca gaa agg gag gtg aca gac ctt ctc cgt gag	3447
Asp Arg Leu Lys Glu Ala Glu Arg Glu Val Thr Asp Leu Leu Arg Glu	
1070 1075 1080 1085	
gct cag gaa gtc aaa gat gta gat caa aat ctg atg gat cgc ctt cag	3495
Ala Gln Glu Val Lys Asp Val Asp Gln Asn Leu Met Asp Arg Leu Gln	
1090 1095 1100	
aga gta aat agc agc ctg cat agc caa att agc cga ctg cag aat atc	3543
Arg Val Asn Ser Ser Leu His Ser Gln Ile Ser Arg Leu Gln Asn Ile	
1105 1110 1115	
cgg aat act atc gaa gag acc ggg atc ttg gct gag cga gca cgg tcc	3591
Arg Asn Thr Ile Glu Glu Thr Gly Ile Leu Ala Glu Arg Ala Arg Ser	
1120 1125 1130	
cga gtg gag agt aca gag cag ctg att gag atc gcc tcc agg gag ctc	3639
Arg Val Glu Ser Thr Glu Gln Leu Ile Glu Ile Ala Ser Arg Glu Leu	
1135 1140 1145	
gag aaa gca aaa atg gcc gcc aat gtg tca atc act cag cca gag tct	3687
Glu Lys Ala Lys Met Ala Ala Asn Val Ser Ile Thr Gln Pro Glu Ser	
1150 1155 1160 1165	
aca ggg gag cca aac aac atg acc ctc ttg gca gaa gaa gcc cga agg	3735
Thr Gly Glu Pro Asn Asn Met Thr Leu Leu Ala Glu Glu Ala Arg Arg	
1170 1175 1180	
ctt gca gag cgt cat aaa cag gaa gcc gat gac att gta cga gtg gca	3783
Leu Ala Glu Arg His Lys Gln Glu Ala Asp Asp Ile Val Arg Val Ala	
1185 1190 1195	
aag aca gcc aac gag act tca gct gag gca tat aat ctg ctt ttg agg	3831
Lys Thr Ala Asn Glu Thr Ser Ala Glu Ala Tyr Asn Leu Leu Leu Arg	
1200 1205 1210	
acc ctg gca gga gaa aat caa act gcg ctg gag att gaa gaa ctt aac	3879
Thr Leu Ala Gly Glu Asn Gln Thr Ala Leu Glu Ile Glu Glu Leu Asn	
1215 1220 1225	
cgg aag tac gaa caa gca aag aac atc tct cag gac ctg gag aag cag	3927



Arg Lys Tyr Glu Gln Ala Lys Asn Ile Ser Gln Asp Leu Glu Lys Gln	
1230 1235 1240 1245	
gct gcc cga gtc cat gag gaa gcc aag cgt gca ggt gac aaa gcc gta	3975
Ala Ala Arg Val His Glu Glu Ala Lys Arg Ala Gly Asp Lys Ala Val	
1250 1255 1260	
gag atc tat gcc agt gtg gcc cag ctg acc cct gtg gac tct gag gcc	4023
Glu Ile Tyr Ala Ser Val Ala Gln Leu Thr Pro Val Asp Ser Glu Ala	
1265 1270 1275	
ctg gag aat gaa gca aat aaa atc aag aaa gaa gct gca gac ctg gac	4071
Leu Glu Asn Glu Ala Asn Lys Ile Lys Lys Glu Ala Ala Asp Leu Asp	
1280 1285 1290	
cgt ctg att gac cag aag cta aag gat tac gag gac ctc agg gaa gac	4119
Arg Leu Ile Asp Gln Lys Leu Lys Asp Tyr Glu Asp Leu Arg Glu Asp	
1295 1300 1305	
atg aga gga aag gaa cat gaa gtg aag aac ctt cta gag aag ggg aaa	4167
Met Arg Gly Lys Glu His Glu Val Lys Asn Leu Leu Glu Lys Gly Lys	
1310 1315 1320 1325	
gct gaa cag cag acc gcc gac caa ctc cta gct cga gcc gat gct gcc	4215
Ala Glu Gln Gln Thr Ala Asp Gln Leu Leu Ala Arg Ala Asp Ala Ala	
1330 1335 1340	
aag gcc ctt gct gaa gaa gct gct aag aag gga cgc agt acc tta caa	4263
Lys Ala Leu Ala Glu Glu Ala Ala Lys Lys Gly Arg Ser Thr Leu Gln	
1345 1350 1355	
gaa gcc aat gac att ctc aac aac ctg aaa gat ttt gat aga cgt gtg	4311
Glu Ala Asn Asp Ile Leu Asn Asn Leu Lys Asp Phe Asp Arg Arg Val	
1360 1365 1370	
aac gat aac aag aca gcc gcg gaa gaa gct cta agg aga att ccc gcc	4359
Asn Asp Asn Lys Thr Ala Ala Glu Glu Ala Leu Arg Arg Ile Pro Ala	
1375 1380 1385	
atc aac cgg acc ata gct gaa gcc aat gag aag aca agg gag gcc cag	4407
Ile Asn Arg Thr Ile Ala Glu Ala Asn Glu Lys Thr Arg Glu Ala Gln	
1390 1395 1400 1405	
cta gcg ctg ggc aat gct gcc gct gac gcc acg gag gcc aag aac aag	4455
Leu Ala Leu Gly Asn Ala Ala Ala Asp Ala Thr Glu Ala Lys Asn Lys	
1410 1415 1420	
gcc cat gag gca gag agg atc gcc agc gcc gcg cag aag aat gcc acc	4503
Ala His Glu Ala Glu Arg Ile Ala Ser Ala Ala Gln Lys Asn Ala Thr	
1425 1430 1435	
agt acc aag gcg gac gca gaa aga acc ttc ggg gaa gtt aca gat ctg	4551
Ser Thr Lys Ala Asp Ala Glu Arg Thr Phe Gly Glu Val Thr Asp Leu	
1440 1445 1450	
gat aat gag gtg aac ggt atg ctg agg cag cta gag gag gca gag aat	4599
Asp Asn Glu Val Asn Gly Met Leu Arg Gln Leu Glu Glu Ala Glu Asn	
1455 1460 1465	
gag ctg aag agg aag caa gat gac gcc gac cag gac atg atg atg gcg	4647
Glu Leu Lys Arg Lys Gln Asp Asp Ala Asp Gln Asp Met Met Met Ala	

1470	1475	1480	1485	
ggg atg gct tct caa gcc gct cag gag gct gag ctc aat gcc aga aag				4695
Gly Met Ala Ser Gln Ala Ala Gln Glu Ala Glu Leu Asn Ala Arg Lys				
	1490	1495	1500	
gcc aaa aac tct gtc agc agc ctc ctc agc cag ctg aac aac ctc ttg				4743
Ala Lys Asn Ser Val Ser Ser Leu Leu Ser Gln Leu Asn Asn Leu Leu				
	1505	1510	1515	
gat cag cta gga cag ctg gac aca gtg gac ctg aac aag ctc aat gag				4791
Asp Gln Leu Gly Gln Leu Asp Thr Val Asp Leu Asn Lys Leu Asn Glu				
	1520	1525	1530	
atc gaa ggc tcc ctg aac aaa gcc aaa gac gaa atg aag gcc agc gac				4839
Ile Glu Gly Ser Leu Asn Lys Ala Lys Asp Glu Met Lys Ala Ser Asp				
	1535	1540	1545	
ctg gac agg aag gtg tct gac ctg gag agc gag gct cgg aag cag gaa				4887
Leu Asp Arg Lys Val Ser Asp Leu Glu Ser Glu Ala Arg Lys Gln Glu				
	1550	1555	1560	1565
gca gcc atc atg gac tat aac cgg gac ata gca gag atc att aag gat				4935
Ala Ala Ile Met Asp Tyr Asn Arg Asp Ile Ala Glu Ile Ile Lys Asp				
	1570	1575	1580	
att cac aac ctg gag gac atc aag aag acc cta cca acc ggc tgc ttc				4983
Ile His Asn Leu Glu Asp Ile Lys Lys Thr Leu Pro Thr Gly Cys Phe				
	1585	1590	1595	
aac acc ccg tct atc gag aag ccc tagtggcgag agggctgtaa ggcagtgtcc				5037
Asn Thr Pro Ser Ile Glu Lys Pro				
	1600	1605		
ctgacagggg accctgtgag gcctcgggtgc cttgacacaa agattacact tttcagaccc				5097
ccactttctct gctgctctcc atcactgtcc ttttgaccca agaaaagtca gagtttaaaag				5157
agaagcaagt taaacatctt taaccaggaa caaagggttt tgcctaataa agtctctcct				5217
ccactttctgt cagcacceta ccggaacttt cccttgtttg cctgaagtca cggcatcttc				5277
caggggccta cccacatcat gtgaaccttt taatgccagg gcagaccag cccctcccc				5337
tctctcaaca ccagcaggac ctatctcagt actcatgttt ctatgaagga aatctttggc				5397
tcctcatcgt agcattgaga tgccagtat gtccgctctg catcttctgc ctctctttg				5457
aaaggaaata aacatcctcg tgccaaagggt attggtcatt tagaatagtg gtggccatcc				5517
atcagacatg ctggctggct gagcatagga cacagagccg tcgtgggtga gcgtagttac				5577
atgtgggtcc ccaggagaac atggctcaaa gatgcttagg gttcctcctg ttttcattga				5637
ctaggaagat gaatgtttcc caaatcctca ggcagctgat aaaaagtctg gatgggcagc				5697
tcgcacgcac cactacgtga ggtagctttt gatattttta taagcaggac ttaatgcaga				5757
agaaacagat gtgataacca ctcaagtttt tttccccaag tagtactaat tcttaaagct				5817
ttgttagtgt tagtcttgga actgttggtg agatagctgt caaaacagtt gtcctctaag				5877

gtcatgacca atgaaagaag agcaaatctc cttttcccca tttttcttgg gaagtggctg 5937  
 taatcgggat gtaaccgctc tcattaggat tccatgagtg cttttctttt tctctttttc 5997  
 ttggagagag atgtgacgtt tggcccttag ctccattctc ttctgatgtt tccgttcttt 6057  
 ctagaactct tcagagcaca tcgttggttg ccaggtcctg gtggcaaaca cccgctcaca 6117  
 gtgtttctca aggctgcca ccccatctag ttcttgactt ttgtcggtcc gccactcca 6177  
 agcctttcct ctgtgtggag aggggaagatc catacgtggc atttctagt gggcttctca 6237  
 acctctgac ctcagctcgg tggctctcct aagaccacac tgtgacagtt ccctgccaca 6297  
 catccccctc ctctaccta cctgcctctg agattcatat ttagccttta acactatgca 6357  
 attttgtact ttgcgtacgg ggggaaagaa actattatct gacacactgg tgctattatt 6417  
 tgaaatttat attttttgtg tgaatggatt ttgtttatca tgattataga gtaaggaatt 6477  
 tatgtaaata tccccggtcc tctagaacg gcactgtctg ctacagctct tgctcagttg 6537  
 tccctctcac tggcacagga acctgtacca tgcttggtca cgtcgtgctt ggtccccagt 6597  
 gttttgtctc acctctgctt tgtgtttgca gcacttctac tgtctgaccg gaagcctgct 6657  
 cacctccaca acttgactga agagggccct ctccccgtg gctctgacca tctgagctgc 6717  
 agctcctcaa ggttctcatg cctgcccgga gcagtagcca agctgacagg gtaaagggat 6777  
 taggaacgtt tgtttgtgga accttccac acgggtcagt tttctaaggg agcatgtgat 6837  
 gactgaacac ttgagggcat cagcaccgtg ctactgatga cagaggggag gctctgttca 6897  
 gcctgtctcc atctcggaga ttgccacaaa atctcagctt ggcactctcc gaggcctttt 6957  
 gtgccacggc aagaaggcgt ggctcacca agttcagtg tgaattggcta gttcctctat 7017  
 tccgagctca ccaccttaac attttggtca cagttgcaag aaaatggctg aaacagacca 7077  
 ccaccagcat cttttgggtc aactccactc cagcaggccc gaggcgctgg tgggtggggt 7137  
 gttttgggtt gttttctcca gcttttgttg tatattttta aacagaattt ttttttttaa 7197  
 aatgaaagt atttacaaga tgatacctta ttacgtcct tcgacacagc cattgcttta 7257  
 ttgtatagtt ccaataatct gtattttatg taatgaaatg gacagaatgg ctgctgtaga 7317  
 atgcgggggtg ccgcacagaa cagattgttt tatccccccc ccgccccgc ccatggaatt 7377  
 ttcttttgat tccaactgtg gcccttttca atgtgccttc acttttagctg tttgccttaa 7437  
 tctctacagc cttccccct cagggagggc aataaagcgc aacacttggc atttttttat 7497  
 gtttaaaaag aaaacagtat tttatttata ataaaatctg aatatttgta acccttt 7554

<210> 18  
 <211> 1605  
 <212> PRT

<213> Mus musculus

<400> 18

Met Thr Gly Gly Gly Arg Ala Ala Leu Ala Leu Gln Pro Arg Gly Arg  
1 5 10 15  
Leu Trp Pro Leu Leu Ala Val Leu Ala Ala Val Ala Gly Cys Val Arg  
20 25 30  
Ala Ala Met Asp Glu Cys Ala Asp Glu Gly Gly Arg Pro Gln Arg Cys  
35 40 45  
Met Pro Glu Phe Val Asn Ala Ala Phe Asn Val Thr Val Val Ala Thr  
50 55 60  
Asn Thr Cys Gly Thr Pro Pro Glu Glu Tyr Cys Val Gln Thr Gly Val  
65 70 75 80  
Thr Gly Val Thr Lys Ser Cys His Leu Cys Asp Ala Gly Gln Gln His  
85 90 95  
Leu Gln His Gly Ala Ala Phe Leu Thr Asp Tyr Asn Asn Gln Ala Asp  
100 105 110  
Thr Thr Trp Trp Gln Ser Gln Thr Met Leu Ala Gly Val Gln Tyr Pro  
115 120 125  
Asn Ser Ile Asn Leu Thr Leu His Leu Gly Lys Ala Phe Asp Ile Thr  
130 135 140  
Tyr Val Arg Leu Lys Phe His Thr Ser Arg Pro Glu Ser Phe Ala Ile  
145 150 155 160  
Tyr Lys Arg Thr Arg Glu Asp Gly Pro Trp Ile Pro Tyr Gln Tyr Tyr  
165 170 175  
Ser Gly Ser Cys Glu Asn Thr Tyr Ser Lys Ala Asn Arg Gly Phe Ile  
180 185 190  
Arg Thr Gly Gly Asp Glu Gln Gln Ala Leu Cys Thr Asp Glu Phe Ser  
195 200 205  
Asp Ile Ser Pro Leu Thr Gly Gly Asn Val Ala Phe Ser Thr Leu Glu  
210 215 220  
Gly Arg Pro Ser Ala Tyr Asn Phe Asp Asn Ser Pro Val Leu Gln Glu  
225 230 235 240  
Trp Val Thr Ala Thr Asp Ile Arg Val Thr Leu Asn Arg Leu Asn Thr  
245 250 255  
Phe Gly Asp Glu Val Phe Asn Asp Pro Lys Val Leu Lys Ser Tyr Tyr  
260 265 270  
Tyr Ala Ile Ser Asp Phe Ala Val Gly Gly Arg Cys Lys Cys Asn Gly  
275 280 285  
His Ala Ser Glu Cys Val Lys Asn Glu Phe Asp Lys Leu Met Cys Asn  
290 295 300  
Cys Lys His Asn Thr Tyr Gly Val Asp Cys Glu Lys Cys Leu Pro Phe

305		310		315		320
Phe Asn Asp Arg Pro Trp Arg Arg Ala Thr Ala Glu Ser Ala Ser Glu						
	325			330		335
Cys Leu Pro Cys Asp Cys Asn Gly Arg Ser Gln Glu Cys Tyr Phe Asp						
	340		345			350
Pro Glu Leu Tyr Arg Ser Thr Gly His Gly Gly His Cys Thr Asn Cys						
	355		360			365
Arg Asp Asn Thr Asp Gly Ala Lys Cys Glu Arg Cys Arg Glu Asn Phe						
	370		375			380
Phe Arg Leu Gly Asn Thr Glu Ala Cys Ser Pro Cys His Cys Ser Pro						
	385		390			395
Val Gly Ser Leu Ser Thr Gln Cys Asp Ser Tyr Gly Arg Cys Ser Cys						
		405		410		415
Lys Pro Gly Val Met Gly Asp Lys Cys Asp Arg Cys Gln Pro Gly Phe						
		420		425		430
His Ser Leu Thr Glu Ala Gly Cys Arg Pro Cys Ser Cys Asp Pro Ser						
		435		440		445
Gly Ser Thr Asp Glu Cys Asn Val Glu Thr Gly Arg Cys Val Cys Lys						
		450		455		460
Asp Asn Val Glu Gly Phe Asn Cys Glu Arg Cys Lys Pro Gly Phe Phe						
		465		470		475
Asn Leu Glu Ser Ser Asn Pro Lys Gly Cys Thr Pro Cys Phe Cys Phe						
		485		490		495
Gly His Ser Ser Val Cys Thr Asn Ala Val Gly Tyr Ser Val Tyr Asp						
		500		505		510
Ile Ser Ser Thr Phe Gln Ile Asp Glu Asp Gly Trp Arg Val Glu Gln						
		515		520		525
Arg Asp Gly Ser Glu Ala Ser Leu Glu Trp Ser Ser Asp Arg Gln Tyr						
		530		535		540
Ile Ala Val Ile Ser Asp Ser Tyr Phe Pro Arg Tyr Phe Ile Ala Pro						
		545		550		555
Val Lys Phe Leu Gly Asn Gln Val Leu Ser Tyr Gly Gln Asn Leu Ser						
		565		570		575
Phe Ser Phe Arg Val Asp Arg Arg Asp Thr Arg Leu Ser Ala Glu Asp						
		580		585		590
Leu Val Leu Glu Gly Ala Gly Leu Arg Val Ser Val Pro Leu Ile Ala						
		595		600		605
Gln Gly Asn Ser Tyr Pro Ser Glu Thr Thr Val Lys Tyr Ile Phe Arg						
		610		615		620
Leu His Glu Ala Thr Asp Tyr Pro Trp Arg Pro Ala Leu Ser Pro Phe						
		625		630		635
						640

Glu Phe Gln Lys Leu Leu Asn Asn Leu Thr Ser Ile Lys Ile Arg Gly  
 645 650 655  
 Thr Tyr Ser Glu Arg Ser Ala Gly Tyr Leu Asp Asp Val Thr Leu Gln  
 660 665 670  
 Ser Ala Arg Pro Gly Pro Gly Val Pro Ala Thr Trp Val Glu Ser Cys  
 675 680 685  
 Thr Cys Pro Val Gly Tyr Gly Gly Gln Phe Cys Glu Thr Cys Leu Pro  
 690 695 700  
 Gly Tyr Arg Arg Glu Thr Pro Ser Leu Gly Pro Tyr Ser Pro Cys Val  
 705 710 715 720  
 Leu Cys Thr Cys Asn Gly His Ser Glu Thr Cys Asp Pro Glu Thr Gly  
 725 730 735  
 Val Cys Asp Cys Arg Asp Asn Thr Ala Gly Pro His Cys Glu Lys Cys  
 740 745 750  
 Ser Asp Gly Tyr Tyr Gly Asp Ser Thr Leu Gly Thr Ser Ser Asp Cys  
 755 760 765  
 Gln Pro Cys Pro Cys Pro Gly Gly Ser Ser Cys Ala Ile Val Pro Lys  
 770 775 780  
 Thr Lys Glu Val Val Cys Thr His Cys Pro Thr Gly Thr Ala Gly Lys  
 785 790 795 800  
 Arg Cys Glu Leu Cys Asp Asp Gly Tyr Phe Gly Asp Pro Leu Gly Ser  
 805 810 815  
 Asn Gly Pro Val Arg Leu Cys Arg Pro Cys Gln Cys Asn Asp Asn Ile  
 820 825 830  
 Asp Pro Asn Ala Val Gly Asn Cys Asn Arg Leu Thr Gly Glu Cys Leu  
 835 840 845  
 Lys Cys Ile Tyr Asn Thr Ala Gly Phe Tyr Cys Asp Arg Cys Lys Glu  
 850 855 860  
 Gly Phe Phe Gly Asn Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Lys  
 865 870 875 880  
 Ala Cys Ala Cys Asn Tyr Gly Thr Val Gln Gln Gln Ser Ser Cys Asn  
 885 890 895  
 Pro Val Thr Gly Gln Cys Gln Cys Leu Pro His Val Ser Gly Arg Asp  
 900 905 910  
 Cys Gly Thr Cys Asp Pro Gly Tyr Tyr Asn Leu Gln Ser Gly Gln Gly  
 915 920 925  
 Cys Glu Arg Cys Asp Cys His Ala Leu Gly Ser Thr Asn Gly Gln Cys  
 930 935 940  
 Asp Ile Arg Thr Gly Gln Cys Glu Cys Gln Pro Gly Ile Thr Gly Gln  
 945 950 955 960

His Cys Glu Arg Cys Glu Thr Asn His Phe Gly Phe Gly Pro Glu Gly	965	970	975
Cys Lys Pro Cys Asp Cys His His Glu Gly Ser Leu Ser Leu Gln Cys	980	985	990
Lys Asp Asp Gly Arg Cys Glu Cys Arg Glu Gly Phe Val Gly Asn Arg	995	1000	1005
Cys Asp Gln Cys Glu Glu Asn Tyr Phe Tyr Asn Arg Ser Trp Pro Gly	1010	1015	1020
Cys Gln Glu Cys Pro Ala Cys Tyr Arg Leu Val Lys Asp Lys Ala Ala	1025	1030	1035
Glu His Arg Val Lys Leu Gln Glu Leu Glu Ser Leu Ile Ala Asn Leu	1045	1050	1055
Gly Thr Gly Asp Asp Met Val Thr Asp Gln Ala Phe Glu Asp Arg Leu	1060	1065	1070
Lys Glu Ala Glu Arg Glu Val Thr Asp Leu Leu Arg Glu Ala Gln Glu	1075	1080	1085
Val Lys Asp Val Asp Gln Asn Leu Met Asp Arg Leu Gln Arg Val Asn	1090	1095	1100
Ser Ser Leu His Ser Gln Ile Ser Arg Leu Gln Asn Ile Arg Asn Thr	1105	1110	1115
Ile Glu Glu Thr Gly Ile Leu Ala Glu Arg Ala Arg Ser Arg Val Glu	1125	1130	1135
Ser Thr Glu Gln Leu Ile Glu Ile Ala Ser Arg Glu Leu Glu Lys Ala	1140	1145	1150
Lys Met Ala Ala Asn Val Ser Ile Thr Gln Pro Glu Ser Thr Gly Glu	1155	1160	1165
Pro Asn Asn Met Thr Leu Leu Ala Glu Glu Ala Arg Arg Leu Ala Glu	1170	1175	1180
Arg His Lys Gln Glu Ala Asp Asp Ile Val Arg Val Ala Lys Thr Ala	1185	1190	1195
Asn Glu Thr Ser Ala Glu Ala Tyr Asn Leu Leu Leu Arg Thr Leu Ala	1205	1210	1215
Gly Glu Asn Gln Thr Ala Leu Glu Ile Glu Glu Leu Asn Arg Lys Tyr	1220	1225	1230
Glu Gln Ala Lys Asn Ile Ser Gln Asp Leu Glu Lys Gln Ala Ala Arg	1235	1240	1245
Val His Glu Glu Ala Lys Arg Ala Gly Asp Lys Ala Val Glu Ile Tyr	1250	1255	1260
Ala Ser Val Ala Gln Leu Thr Pro Val Asp Ser Glu Ala Leu Glu Asn	1265	1270	1275
Glu Ala Asn Lys Ile Lys Lys Glu Ala Ala Asp Leu Asp Arg Leu Ile			

1285	1290	1295
Asp Gln Lys Leu Lys Asp Tyr Glu Asp Leu Arg Glu Asp Met Arg Gly 1300	1305	1310
Lys Glu His Glu Val Lys Asn Leu Leu Glu Lys Gly Lys Ala Glu Gln 1315	1320	1325
Gln Thr Ala Asp Gln Leu Leu Ala Arg Ala Asp Ala Ala Lys Ala Leu 1330	1335	1340
Ala Glu Glu Ala Ala Lys Lys Gly Arg Ser Thr Leu Gln Glu Ala Asn 1345	1350	1355
Asp Ile Leu Asn Asn Leu Lys Asp Phe Asp Arg Arg Val Asn Asp Asn 1365	1370	1375
Lys Thr Ala Ala Glu Glu Ala Leu Arg Arg Ile Pro Ala Ile Asn Arg 1380	1385	1390
Thr Ile Ala Glu Ala Asn Glu Lys Thr Arg Glu Ala Gln Leu Ala Leu 1395	1400	1405
Gly Asn Ala Ala Ala Asp Ala Thr Glu Ala Lys Asn Lys Ala His Glu 1410	1415	1420
Ala Glu Arg Ile Ala Ser Ala Ala Gln Lys Asn Ala Thr Ser Thr Lys 1425	1430	1435
Ala Asp Ala Glu Arg Thr Phe Gly Glu Val Thr Asp Leu Asp Asn Glu 1445	1450	1455
Val Asn Gly Met Leu Arg Gln Leu Glu Glu Ala Glu Asn Glu Leu Lys 1460	1465	1470
Arg Lys Gln Asp Asp Ala Asp Gln Asp Met Met Met Ala Gly Met Ala 1475	1480	1485
Ser Gln Ala Ala Gln Glu Ala Glu Leu Asn Ala Arg Lys Ala Lys Asn 1490	1495	1500
Ser Val Ser Ser Leu Leu Ser Gln Leu Asn Asn Leu Leu Asp Gln Leu 1505	1510	1515
Gly Gln Leu Asp Thr Val Asp Leu Asn Lys Leu Asn Glu Ile Glu Gly 1525	1530	1535
Ser Leu Asn Lys Ala Lys Asp Glu Met Lys Ala Ser Asp Leu Asp Arg 1540	1545	1550
Lys Val Ser Asp Leu Glu Ser Glu Ala Arg Lys Gln Glu Ala Ala Ile 1555	1560	1565
Met Asp Tyr Asn Arg Asp Ile Ala Glu Ile Ile Lys Asp Ile His Asn 1570	1575	1580
Leu Glu Asp Ile Lys Lys Thr Leu Pro Thr Gly Cys Phe Asn Thr Pro 1585	1590	1595
Ser Ile Glu Lys Pro 1605		1600



<210> 19  
 <211> 7263  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (1)..(4716)

<400> 19  
 gcc atg gac gag tgc gcg gat gag ggc ggg cgg ccg cag cgc tgc atg 48  
 Ala Met Asp Glu Cys Ala Asp Glu Gly Gly Arg Pro Gln Arg Cys Met  
 1 5 10 15  
 ccg gag ttt gtt aat gcc gcc ttc aat gtg acc gtg gtg gct acc aac 96  
 Pro Glu Phe Val Asn Ala Ala Phe Asn Val Thr Val Val Ala Thr Asn  
 20 25 30  
 acg tgt ggg act ccg ccc gag gag tac tgc gtg cag act ggg gtg acc 144  
 Thr Cys Gly Thr Pro Pro Glu Glu Tyr Cys Val Gln Thr Gly Val Thr  
 35 40 45  
 gga gtc act aag tcc tgt cac ctg tgc gac gcc ggc cag cag cac ctg 192  
 Gly Val Thr Lys Ser Cys His Leu Cys Asp Ala Gly Gln Gln His Leu  
 50 55 60  
 caa cac ggg gca gcc ttc ctg acc gac tac aac aac cag gcc gac acc 240  
 Gln His Gly Ala Ala Phe Leu Thr Asp Tyr Asn Asn Gln Ala Asp Thr  
 65 70 75 80  
 acc tgg tgg caa agc cag act atg ctg gcc ggg gtg cag tac ccc aac 288  
 Thr Trp Trp Gln Ser Gln Thr Met Leu Ala Gly Val Gln Tyr Pro Asn  
 85 90 95  
 tcc atc aac ctc acg ctg cac ctg gga aag gct ttt gac atc act tac 336  
 Ser Ile Asn Leu Thr Leu His Leu Gly Lys Ala Phe Asp Ile Thr Tyr  
 100 105 110  
 gtg cgc ctc aag ttc cac acc agc cgt cca gag agc ttc gcc atc tat 384  
 Val Arg Leu Lys Phe His Thr Ser Arg Pro Glu Ser Phe Ala Ile Tyr  
 115 120 125  
 aag cgc act cgg gaa gac ggg ccc tgg att cct tat cag tac tac agt 432  
 Lys Arg Thr Arg Glu Asp Gly Pro Trp Ile Pro Tyr Gln Tyr Tyr Ser  
 130 135 140  
 ggg tcc tgt gag aac acg tac tca aag gct aac cgt ggc ttc atc agg 480  
 Gly Ser Cys Glu Asn Thr Tyr Ser Lys Ala Asn Arg Gly Phe Ile Arg  
 145 150 155 160  
 acc gga ggg gac gag cag cag gcc ttg tgt act gat gaa ttc agt gac 528  
 Thr Gly Gly Asp Glu Gln Gln Ala Leu Cys Thr Asp Glu Phe Ser Asp  
 165 170 175  
 att tcc ccc ctc acc ggt ggc aac gtg gcc ttt tca acc ctg gaa gga 576  
 Ile Ser Pro Leu Thr Gly Gly Asn Val Ala Phe Ser Thr Leu Glu Gly  
 180 185 190  
 cgg ccg agt gcc tac aac ttt gac aac agc cct gtg ctc cag gaa tgg 624

Arg	Pro	Ser	Ala	Tyr	Asn	Phe	Asp	Asn	Ser	Pro	Val	Leu	Gln	Glu	Trp		
		195					200					205					
gta	act	gcc	act	gac	atc	aga	gtg	acg	ctc	aat	cgc	ctg	aac	acc	ttt	672	
Val	Thr	Ala	Thr	Asp	Ile	Arg	Val	Thr	Leu	Asn	Arg	Leu	Asn	Thr	Phe		
	210					215					220						
gga	gat	gaa	gtg	ttt	aac	gac	ccc	aaa	gtt	ctc	aag	tct	tac	tat	tac	720	
Gly	Asp	Glu	Val	Phe	Asn	Asp	Pro	Lys	Val	Leu	Lys	Ser	Tyr	Tyr	Tyr		
	225				230					235					240		
gca	atc	tca	gac	ttt	gct	gtg	ggc	ggc	agg	tgt	aaa	tgt	aac	gga	cat	768	
Ala	Ile	Ser	Asp	Phe	Ala	Val	Gly	Gly	Arg	Cys	Lys	Cys	Asn	Gly	His		
				245					250					255			
gcc	agc	gag	tgt	gta	aag	aac	gag	ttt	gac	aaa	ctc	atg	tgc	aac	tgc	816	
Ala	Ser	Glu	Cys	Val	Lys	Asn	Glu	Phe	Asp	Lys	Leu	Met	Cys	Asn	Cys		
		260						265					270				
aaa	cat	aac	aca	tac	gga	gtt	gac	tgt	gaa	aag	tgc	ctg	cct	ttc	ttc	864	
Lys	His	Asn	Thr	Tyr	Gly	Val	Asp	Cys	Glu	Lys	Cys	Leu	Pro	Phe	Phe		
		275					280					285					
aat	gac	cgg	ccg	tgg	agg	agg	gcg	act	gct	gag	agc	gcc	agc	gag	tgc	912	
Asn	Asp	Arg	Pro	Trp	Arg	Arg	Ala	Thr	Ala	Glu	Ser	Ala	Ser	Glu	Cys		
	290					295					300						
ctt	cct	tgt	gac	tgc	aat	ggc	cga	tcc	caa	gag	tgc	tac	ttt	gat	cct	960	
Leu	Pro	Cys	Asp	Cys	Asn	Gly	Arg	Ser	Gln	Glu	Cys	Tyr	Phe	Asp	Pro		
	305				310					315					320		
gaa	cta	tac	cgt	tcc	act	gga	cat	ggt	ggc	cac	tgt	acc	aac	tgc	cgg	1008	
Glu	Leu	Tyr	Arg	Ser	Thr	Gly	His	Gly	Gly	His	Cys	Thr	Asn	Cys	Arg		
				325					330					335			
gat	aac	aca	gat	ggt	gcc	aag	tgc	gag	agg	tgc	cgg	gag	aat	ttc	ttc	1056	
Asp	Asn	Thr	Asp	Gly	Ala	Lys	Cys	Glu	Arg	Cys	Arg	Glu	Asn	Phe	Phe		
			340					345					350				
cgc	ctg	ggg	aac	act	gaa	gcc	tgc	tct	ccg	tgc	cac	tgc	agc	cct	gtt	1104	
Arg	Leu	Gly	Asn	Thr	Glu	Ala	Cys	Ser	Pro	Cys	His	Cys	Ser	Pro	Val		
		355					360					365					
ggt	tct	ctc	agc	aca	cag	tgt	gac	agt	tac	ggc	aga	tgc	agc	tgt	aag	1152	
Gly	Ser	Leu	Ser	Thr	Gln	Cys	Asp	Ser	Tyr	Gly	Arg	Cys	Ser	Cys	Lys		
	370					375					380						
cca	gga	gtg	atg	ggt	gac	aag	tgt	gac	cgt	tgt	cag	cct	ggg	ttc	cat	1200	
Pro	Gly	Val	Met	Gly	Asp	Lys	Cys	Asp	Arg	Cys	Gln	Pro	Gly	Phe	His		
	385				390					395					400		
tcc	ctc	act	gag	gca	gga	tgc	agg	cca	tgc	tcc	tgc	gat	cct	tcg	ggc	1248	
Ser	Leu	Thr	Glu	Ala	Gly	Cys	Arg	Pro	Cys	Ser	Cys	Asp	Pro	Ser	Gly		
				405					410					415			
agc	aca	gac	gag	tgt	aat	gtt	gaa	aca	gga	aga	tgc	gtt	tgc	aaa	gac	1296	
Ser	Thr	Asp	Glu	Cys	Asn	Val	Glu	Thr	Gly	Arg	Cys	Val	Cys	Lys	Asp		
			420					425					430				
aat	gtt	gaa	ggc	ttc	aac	tgt	gag	aga	tgc	aaa	cct	gga	ttt	ttt	aat	1344	
Asn	Val	Glu	Gly	Phe	Asn	Cys	Glu	Arg	Cys	Lys	Pro	Gly	Phe	Phe	Asn		

435	440	445	
ctg gag tca tct aat cct aag ggc tgc aca ccc tgc ttc tgc ttt ggc			1392
Leu Glu Ser Ser Asn Pro Lys Gly Cys Thr Pro Cys Phe Cys Phe Gly			
450	455	460	
cat tct tct gtg tgc aca aat gct gtt ggc tac agt gtt tat gac atc			1440
His Ser Ser Val Cys Thr Asn Ala Val Gly Tyr Ser Val Tyr Asp Ile			
465	470	475	480
tcc tcc acc ttt cag att gat gag gat ggg tgg cgc gtg gag cag aga			1488
Ser Ser Thr Phe Gln Ile Asp Glu Asp Gly Trp Arg Val Glu Gln Arg			
485	490		495
gat ggc tcg gag gcg tct ctg gag tgg tcc tca gac agg caa tat att			1536
Asp Gly Ser Glu Ala Ser Leu Glu Trp Ser Ser Asp Arg Gln Tyr Ile			
500	505		510
gcc gta atc tca gac agt tac ttt cct aga tac ttc atc gcc cct gtg			1584
Ala Val Ile Ser Asp Ser Tyr Phe Pro Arg Tyr Phe Ile Ala Pro Val			
515	520		525
aag ttc ctg ggc aac cag gtc ctg agt tat ggg cag aat ctt tcc ttc			1632
Lys Phe Leu Gly Asn Gln Val Leu Ser Tyr Gly Gln Asn Leu Ser Phe			
530	535		540
tcc ttc cga gtg gac aga cga gac act cgc ctc tcc gca gag gac ctt			1680
Ser Phe Arg Val Asp Arg Arg Asp Thr Arg Leu Ser Ala Glu Asp Leu			
545	550	555	560
gtg ctc gaa gga gct ggc ttg aga gta tcc gtg ccc ttg atc gct cag			1728
Val Leu Glu Gly Ala Gly Leu Arg Val Ser Val Pro Leu Ile Ala Gln			
565	570		575
ggc aac tcc tac ccc agc gag acc act gtg aag tac atc ttc agg ctc			1776
Gly Asn Ser Tyr Pro Ser Glu Thr Val Lys Tyr Ile Phe Arg Leu			
580	585		590
cat gaa gca acg gat tac cct tgg agg ccc gct ctc tcc ccg ttt gaa			1824
His Glu Ala Thr Asp Tyr Pro Trp Arg Pro Ala Leu Ser Pro Phe Glu			
595	600		605
ttt cag aag ctc ctg aac aac ttg acc tct atc aag atc cgt ggt aca			1872
Phe Gln Lys Leu Leu Asn Asn Leu Thr Ser Ile Lys Ile Arg Gly Thr			
610	615		620
tac agc gag agg agc gct ggg tac ttg gat gat gtc acc ttg caa agt			1920
Tyr Ser Glu Arg Ser Ala Gly Tyr Leu Asp Val Thr Leu Gln Ser			
625	630	635	640
gct cgc cct ggg ccc gga gtc cct gca acg tgg gtg gag tcc tgc acc			1968
Ala Arg Pro Gly Pro Gly Val Pro Ala Thr Trp Val Glu Ser Cys Thr			
645	650		655
tgt cca gtg gga tac ggg gga cag ttc tgt gag acg tgc ctc cca ggg			2016
Cys Pro Val Gly Tyr Gly Gly Gln Phe Cys Glu Thr Cys Leu Pro Gly			
660	665		670
tac aga aga gaa act cca agc ctt gga cct tat agc ccg tgt gtg ctc			2064
Tyr Arg Arg Glu Thr Pro Ser Leu Gly Pro Tyr Ser Pro Cys Val Leu			
675	680		685

tgt acc tgt aat ggg cac agt gag acc tgt gac ccg gag aca ggt gtc	2112
Cys Thr Cys Asn Gly His Ser Glu Thr Cys Asp Pro Glu Thr Gly Val	
690 695 700	
tgt gac tgc aga gac aat aca gcc ggc ccc cac tgt gag aaa tgt agc	2160
Cys Asp Cys Arg Asp Asn Thr Ala Gly Pro His Cys Glu Lys Cys Ser	
705 710 715 720	
gat ggg tac tat ggg gac tca acc ctg ggc acc tcc tct gac tgc cag	2208
Asp Gly Tyr Tyr Gly Asp Ser Thr Leu Gly Thr Ser Ser Asp Cys Gln	
725 730 735	
cct tgt ccc tgc ccc ggt ggc tca agt tgt gcc att gtc cca aag aca	2256
Pro Cys Pro Cys Pro Gly Gly Ser Ser Cys Ala Ile Val Pro Lys Thr	
740 745 750	
aag gaa gtg gtg tgc acg cac tgt ccg act ggc act gcc ggc aag aga	2304
Lys Glu Val Val Cys Thr His Cys Pro Thr Gly Thr Ala Gly Lys Arg	
755 760 765	
tgt gaa ctc tgt gat gac ggc tac ttt gga gac cct ctg ggc agc aat	2352
Cys Glu Leu Cys Asp Asp Gly Tyr Phe Gly Asp Pro Leu Gly Ser Asn	
770 775 780	
ggg ccc gtg aga ctg tgc cgc ccg tgc cag tgt aac gac aac ata gac	2400
Gly Pro Val Arg Leu Cys Arg Pro Cys Gln Cys Asn Asp Asn Ile Asp	
785 790 795 800	
ccc aac gcg gtt ggc aac tgc aac cgc ctg acg ggc gag tgc ctg aag	2448
Pro Asn Ala Val Gly Asn Cys Asn Arg Leu Thr Gly Glu Cys Leu Lys	
805 810 815	
tgc atc tat aac acg gct ggt ttc tac tgc gac cgg tgc aag gaa ggg	2496
Cys Ile Tyr Asn Thr Ala Gly Phe Tyr Cys Asp Arg Cys Lys Glu Gly	
820 825 830	
ttt ttc gga aat ccc ctg gct ccc aat cca gcc gac aaa tgc aaa gcc	2544
Phe Phe Gly Asn Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Lys Ala	
835 840 845	
tgc gcc tgc aac tac ggg aca gtg cag caa cag agc agc tgt aac ccg	2592
Cys Ala Cys Asn Tyr Gly Thr Val Gln Gln Gln Ser Ser Cys Asn Pro	
850 855 860	
gtg acc gga caa tgc cag tgt ctg cct cat gtg tct ggc cgc gac tgc	2640
Val Thr Gly Gln Cys Gln Cys Leu Pro His Val Ser Gly Arg Asp Cys	
865 870 875 880	
ggt act tgt gac cct ggc tac tac aac ctg cag agc ggg caa ggc tgc	2688
Gly Thr Cys Asp Pro Gly Tyr Tyr Asn Leu Gln Ser Gly Gln Gly Cys	
885 890 895	
gag agg tgt gac tgc cat gct ttg ggt tcc acc aat ggg cag tgt gac	2736
Glu Arg Cys Asp Cys His Ala Leu Gly Ser Thr Asn Gly Gln Cys Asp	
900 905 910	
atc cgc acc ggg cag tgt gag tgc cag cct ggc atc acc ggt cag cac	2784
Ile Arg Thr Gly Gln Cys Glu Cys Gln Pro Gly Ile Thr Gly Gln His	
915 920 925	

tgt gag cgc tgt gag acc aac cac ttt ggg ttt gga cct gaa ggc tgc Cys Glu Arg Cys Glu Thr Asn His Phe Gly Phe Gly Pro Glu Gly Cys 930 935 940	2832
aaa cct tgt gac tgt cac cat gaa gga tcc ctt tcg ctc cag tgt aaa Lys Pro Cys Asp Cys His His Glu Gly Ser Leu Ser Leu Gln Cys Lys 945 950 955 960	2880
gac gac ggc cgt tgt gaa tgc agg gaa ggc ttt gtg ggc aat cgc tgt Asp Asp Gly Arg Cys Glu Cys Arg Glu Gly Phe Val Gly Asn Arg Cys 965 970 975	2928
gac cag tgt gaa gag aac tat ttc tac aat cgg tcc tgg cct ggc tgc Asp Gln Cys Glu Glu Asn Tyr Phe Tyr Asn Arg Ser Trp Pro Gly Cys 980 985 990	2976
cag gag tgt ccg gct tgt tac cga ctt gtg aag gat aag gct gct gag Gln Glu Cys Pro Ala Cys Tyr Arg Leu Val Lys Asp Lys Ala Ala Glu 995 1000 1005	3024
cat cga gtg aaa ctc cag gag tta gag agc ctc atc gcc aac ctt ggc His Arg Val Lys Leu Gln Glu Leu Glu Ser Leu Ile Ala Asn Leu Gly 1010 1015 1020	3072
act ggg gat gac atg gtg aca gat caa gcc ttt gag gac aga ctt aag Thr Gly Asp Asp Met Val Thr Asp Gln Ala Phe Glu Asp Arg Leu Lys 1025 1030 1035 1040	3120
gaa gca gaa agg gag gtg aca gac ctt ctc cgt gag gct cag gaa gtc Glu Ala Glu Arg Glu Val Thr Asp Leu Leu Arg Glu Ala Gln Glu Val 1045 1050 1055	3168
aaa gat gta gat caa aat ctg atg gat cgc ctt cag aga gta aat agc Lys Asp Val Asp Gln Asn Leu Met Asp Arg Leu Gln Arg Val Asn Ser 1060 1065 1070	3216
agc ctg cat agc caa att agc cga ctg cag aat atc cgg aat act atc Ser Leu His Ser Gln Ile Ser Arg Leu Gln Asn Ile Arg Asn Thr Ile 1075 1080 1085	3264
gaa gag acc ggg atc ttg gct gag cga gca cgg tcc cga gtg gag agt Glu Glu Thr Gly Ile Leu Ala Glu Arg Ala Arg Ser Arg Val Glu Ser 1090 1095 1100	3312
aca gag cag ctg att gag atc gcc tcc agg gag ctc gag aaa gca aaa Thr Glu Gln Leu Ile Glu Ile Ala Ser Arg Glu Leu Glu Lys Ala Lys 1105 1110 1115 1120	3360
atg gcc gcc aat gtg tca atc act cag cca gag tct aca ggg gag cca Met Ala Ala Asn Val Ser Ile Thr Gln Pro Glu Ser Thr Gly Glu Pro 1125 1130 1135	3408
aac aac atg acc ctc ttg gca gaa gaa gcc cga agg ctt gca gag cgt Asn Asn Met Thr Leu Leu Ala Glu Glu Ala Arg Arg Leu Ala Glu Arg 1140 1145 1150	3456
cat aaa cag gaa gcc gat gac att gta cga gtg gca aag aca gcc aac His Lys Gln Glu Ala Asp Asp Ile Val Arg Val Ala Lys Thr Ala Asn 1155 1160 1165	3504
gag act tca gct gag gca tat aat ctg ctt ttg agg acc ctg gca gga	3552

Glu Thr Ser Ala Glu Ala Tyr Asn Leu Leu Leu Arg Thr Leu Ala Gly	
1170 1175 1180	
gaa aat caa act gcg ctg gag att gaa gaa ctt aac cgg aag tac gaa	3600
Glu Asn Gln Thr Ala Leu Glu Ile Glu Glu Leu Asn Arg Lys Tyr Glu	
1185 1190 1195 1200	
caa gca aag aac atc tct cag gac ctg gag aag cag gct gcc cga gtc	3648
Gln Ala Lys Asn Ile Ser Gln Asp Leu Glu Lys Gln Ala Ala Arg Val	
1205 1210 1215	
cat gag gaa gcc aag cgt gca ggt gac aaa gcc gta gag atc tat gcc	3696
His Glu Glu Ala Lys Arg Ala Gly Asp Lys Ala Val Glu Ile Tyr Ala	
1220 1225 1230	
agt gtg gcc cag ctg acc cct gtg gac tct gag gcc ctg gag aat gaa	3744
Ser Val Ala Gln Leu Thr Pro Val Asp Ser Glu Ala Leu Glu Asn Glu	
1235 1240 1245	
gca aat aaa atc aag aaa gaa gct gca gac ctg gac cgt ctg att gac	3792
Ala Asn Lys Ile Lys Lys Glu Ala Ala Asp Leu Asp Arg Leu Ile Asp	
1250 1255 1260	
cag aag cta aag gat tac gag gac ctc agg gaa gac atg aga gga aag	3840
Gln Lys Leu Lys Asp Tyr Glu Asp Leu Arg Glu Asp Met Arg Gly Lys	
1265 1270 1275 1280	
gaa cat gaa gtg aag aac ctt cta gag aag ggg aaa gct gaa cag cag	3888
Glu His Glu Val Lys Asn Leu Leu Glu Lys Gly Lys Ala Glu Gln Gln	
1285 1290 1295	
acc gcc gac caa ctc cta gct cga gcc gat gct gcc aag gcc ctt gct	3936
Thr Ala Asp Gln Leu Leu Ala Arg Ala Asp Ala Ala Lys Ala Leu Ala	
1300 1305 1310	
gaa gaa gct gct aag aag gga cgc agt acc tta caa gaa gcc aat gac	3984
Glu Glu Ala Ala Lys Lys Gly Arg Ser Thr Leu Gln Glu Ala Asn Asp	
1315 1320 1325	
att ctc aac aac ctg aaa gat ttt gat aga cgt gtg aac gat aac aag	4032
Ile Leu Asn Asn Leu Lys Asp Phe Asp Arg Arg Val Asn Asp Asn Lys	
1330 1335 1340	
aca gcc gcg gaa gaa gct cta agg aga att ccc gcc atc aac cgg acc	4080
Thr Ala Ala Glu Glu Ala Leu Arg Arg Ile Pro Ala Ile Asn Arg Thr	
1345 1350 1355 1360	
ata gct gaa gcc aat gag aag aca agg gag gcc cag cta gcg ctg ggc	4128
Ile Ala Glu Ala Asn Glu Lys Thr Arg Glu Ala Gln Leu Ala Leu Gly	
1365 1370 1375	
aat gct gcc gct gac gcc acg gag gcc aag aac aag gcc cat gag gca	4176
Asn Ala Ala Ala Asp Ala Thr Glu Ala Lys Asn Lys Ala His Glu Ala	
1380 1385 1390	
gag agg atc gcc agc gcc gcg cag aag aat gcc acc agt acc aag gcg	4224
Glu Arg Ile Ala Ser Ala Ala Gln Lys Asn Ala Thr Ser Thr Lys Ala	
1395 1400 1405	
gac gca gaa aga acc ttc ggg gaa gtt aca gat ctg gat aat gag gtg	4272
Asp Ala Glu Arg Thr Phe Gly Glu Val Thr Asp Leu Asp Asn Glu Val	

1410	1415	1420	
aac ggt atg ctg agg cag cta gag gag gca gag aat gag ctg aag agg			4320
Asn Gly Met Leu Arg Gln Leu Glu Glu Ala Glu Asn Glu Leu Lys Arg			
1425	1430	1435	1440
aag caa gat gac gcc gac cag gac atg atg atg gcg ggg atg gct tcg			4368
Lys Gln Asp Asp Ala Asp Gln Asp Met Met Met Ala Gly Met Ala Ser			
1445	1450	1455	
caa gcc gct cag gag gct gag ctc aat gcc aga aag gcc aaa aac tct			4416
Gln Ala Ala Gln Glu Ala Glu Leu Asn Ala Arg Lys Ala Lys Asn Ser			
1460	1465	1470	
gtc agc agc ctc ctc agc cag ctg aac aac ctc ttg gat cag cta gga			4464
Val Ser Ser Leu Leu Ser Gln Leu Asn Asn Leu Leu Asp Gln Leu Gly			
1475	1480	1485	
cag ctg gac aca gtg gac ctg aac aag ctc aat gag atc gaa ggc tcc			4512
Gln Leu Asp Thr Val Asp Leu Asn Lys Leu Asn Glu Ile Glu Gly Ser			
1490	1495	1500	
ctg aac aaa gcc aaa gac gaa atg aag gcc agc gac ctg gac agg aag			4560
Leu Asn Lys Ala Lys Asp Glu Met Lys Ala Ser Asp Leu Asp Arg Lys			
1505	1510	1515	1520
gtg tct gac ctg gag agc gag gct cgg aag cag gaa gca gcc atc atg			4608
Val Ser Asp Leu Glu Ser Glu Ala Arg Lys Gln Glu Ala Ala Ile Met			
1525	1530	1535	
gac tat aac cgg gac ata gca gag atc att aag gat att cac aac ctg			4656
Asp Tyr Asn Arg Asp Ile Ala Glu Ile Ile Lys Asp Ile His Asn Leu			
1540	1545	1550	
gag gac atc aag aag acc cta cca acc ggc tgc ttc aac acc ccg tct			4704
Glu Asp Ile Lys Lys Thr Leu Pro Thr Gly Cys Phe Asn Thr Pro Ser			
1555	1560	1565	
atc gag aag ccc tagtggcgag agggctgtaa ggcagtgtcc ctgacagggg			4756
Ile Glu Lys Pro			
1570			
accctgtgag gcctcggtgc cttgacacaa agattacact tttcagaccc ccacttctct			4816
gctgctctcc atcactgtcc ttttgaccca agaaaagtca gagtttaaag agaagcaagt			4876
taaacatctt taaccaggaa caaagggttt tgcctaataa agtctctcct ccacttctgt			4936
cagcacccta ccggaacttt cccttgtttg cctgaagtca cggcatcttc caggggccta			4996
cccacatcat gtgaaccttt taatgccagg gcagaccag cccctcccc tctctcaaca			5056
ccagcaggac ctatctcagt actcatgttt ctatgaagga aatctttggc tctcatcgt			5116
agcattgaga tggccagtat gtccgctctg catcttctgc ctctctttg aaaggaaata			5176
aacatcctcg tgccaaaggt attggtcatt tagaatagtg gtggccatcc atcagacatg			5236
ctggctggct gagcatagga cacagagccg tcgtgggtga gcgtagttac atgtgggtcc			5296
ccaggagaac atggctcaaa gatgcttagg gttctctctg ttttcattga ctaggaagat			5356

gaatgtttcc	caaatcctca	ggcagctgat	aaaaagtctg	gatgggcagc	tcgcacgcac	5416
cactacgtga	ggtagctttt	gatattttta	taagcaggac	ttaatgcaga	agaaacagat	5476
gtgataacca	ctcaagtttt	tttccccaag	tagtactaat	tcttaaagct	ttgttagtgt	5536
tagtcttgga	actgttggtg	agatagctgt	caaaacagtt	gtcctctaag	gtcatgacca	5596
atgaaagaag	agcaaatctc	cttttcccca	tattttctgg	gaagtggctg	taatcgggat	5656
gtaaccgctc	tcattaggat	tccatgagtg	cattttctttt	tctctttttc	ttggagagag	5716
atgtgacgtt	tggcccttag	ctccattctc	ttctgatgtt	tccgttcttt	ctagaactct	5776
tcagagcaca	tcgttgtttg	ccaggctctg	gtggcaaaca	cccgtccaca	gtgttttctc	5836
aggctgccaa	ccccatctag	ttcctgcact	ttgtcgggtc	gccactcca	agcctttcct	5896
ctgtgtggag	agggaagatc	catacgtggc	atttcctagt	gggcttctca	acctctgata	5956
ctcagctcgg	tgggtctcct	aagaccacac	tgtgacagtt	ccctgccaca	catccccctc	6016
ctcctaccta	cctgcctctg	agattcata	ttagccttta	acactatgca	attttgtact	6076
ttgcgtacgg	ggggaaagaa	actattatct	gacacactgg	tgctattatt	tgaaatttat	6136
attttttgtg	tgaatggatt	ttgtttatca	tgattataga	gtaaggaatt	tatgtaaata	6196
ttcccgggtc	tcttagaacg	gcactgtctg	ctcacgtctc	tgctcagttg	tcctctcac	6256
tggcacagga	acctgtacca	tgcctgggtc	cgtcgtgcct	gggtcccagt	gttttgetcc	6316
acctctgcct	tgtgtttgca	gcaccttcac	tgtctgaccg	gaagcctgct	cacctccaca	6376
acttgactga	agagggccct	cttccccgtg	gctctgacca	tctgagctgc	agctcctcaa	6436
ggttctcatg	cctgcccgga	gcagtagcca	agctgacagg	gtaaagggat	taggaacgtt	6496
tgtttgtgga	accttcccac	acgggtcagt	tttctaaggg	agcatgtgat	gactgaacac	6556
ttgagggcat	cagcaccgtg	ctactgatga	cagaggggag	gctctgttca	gcctgtctcc	6616
atctcggaga	ttgccacaaa	atctcagctt	ggcatcctcc	gaggcctttt	gtgccacggc	6676
aagaaggcgt	ggcctcacca	agttcagtg	tgattggcta	gttcctctat	tccgagctca	6736
ccaccttaac	attttgggtc	cagttgcaag	aaaatggctg	aaacagacca	ccaccagcat	6796
cctttgggtc	aactccactc	cagcaggccc	gaggcgctgg	tgggtggggg	gttttggttt	6856
gttttctcca	gcttttgttg	tatatattta	aacagaattt	tattttttta	aatgaaagtt	6916
atttacaaga	tgatacctta	ttacgctcct	tcgacacagc	cattgcttta	ttgtatagtt	6976
ccaataatct	gtattttatg	taatgaaatg	gacagaatgg	ctgctgtaga	atgccccgtg	7036
ccgcacagaa	cagattgttt	tatccctccc	ccgcccccg	ccatggaatt	ttcctttgat	7096
tcceaactgtg	gcccttttca	atgtgccttc	actttagctg	tttgccctta	tctctacagc	7156



cttccccct cagggagggc aataaagcgc aacacttggc atttttttat gtttaaaaag 7216  
 aaaacagtat tttatttata ataaaatctg aatatttgta acccttt 7263

<210> 20  
 <211> 1572  
 <212> PRT  
 <213> Mus musculus

<400> 20  
 Ala Met Asp Glu Cys Ala Asp Glu Gly Gly Arg Pro Gln Arg Cys Met  
           1                  5                  10                  15  
 Pro Glu Phe Val Asn Ala Ala Phe Asn Val Thr Val Val Ala Thr Asn  
                   20                  25                  30  
 Thr Cys Gly Thr Pro Pro Glu Glu Tyr Cys Val Gln Thr Gly Val Thr  
                   35                  40                  45  
 Gly Val Thr Lys Ser Cys His Leu Cys Asp Ala Gly Gln Gln His Leu  
           50                  55                  60  
 Gln His Gly Ala Ala Phe Leu Thr Asp Tyr Asn Asn Gln Ala Asp Thr  
           65                  70                  75                  80  
 Thr Trp Trp Gln Ser Gln Thr Met Leu Ala Gly Val Gln Tyr Pro Asn  
                   85                  90                  95  
 Ser Ile Asn Leu Thr Leu His Leu Gly Lys Ala Phe Asp Ile Thr Tyr  
                   100                  105                  110  
 Val Arg Leu Lys Phe His Thr Ser Arg Pro Glu Ser Phe Ala Ile Tyr  
           115                  120                  125  
 Lys Arg Thr Arg Glu Asp Gly Pro Trp Ile Pro Tyr Gln Tyr Tyr Ser  
           130                  135                  140  
 Gly Ser Cys Glu Asn Thr Tyr Ser Lys Ala Asn Arg Gly Phe Ile Arg  
           145                  150                  155                  160  
 Thr Gly Gly Asp Glu Gln Gln Ala Leu Cys Thr Asp Glu Phe Ser Asp  
                   165                  170                  175  
 Ile Ser Pro Leu Thr Gly Gly Asn Val Ala Phe Ser Thr Leu Glu Gly  
                   180                  185                  190  
 Arg Pro Ser Ala Tyr Asn Phe Asp Asn Ser Pro Val Leu Gln Glu Trp  
           195                  200                  205  
 Val Thr Ala Thr Asp Ile Arg Val Thr Leu Asn Arg Leu Asn Thr Phe  
           210                  215                  220  
 Gly Asp Glu Val Phe Asn Asp Pro Lys Val Leu Lys Ser Tyr Tyr Tyr  
           225                  230                  235                  240  
 Ala Ile Ser Asp Phe Ala Val Gly Gly Arg Cys Lys Cys Asn Gly His  
                   245                  250                  255  
 Ala Ser Glu Cys Val Lys Asn Glu Phe Asp Lys Leu Met Cys Asn Cys  
           260                  265                  270

Lys	His	Asn	Thr	Tyr	Gly	Val	Asp	Cys	Glu	Lys	Cys	Leu	Pro	Phe	Phe		
		275					280					285					
Asn	Asp	Arg	Pro	Trp	Arg	Arg	Ala	Thr	Ala	Glu	Ser	Ala	Ser	Glu	Cys		
		290				295					300						
Leu	Pro	Cys	Asp	Cys	Asn	Gly	Arg	Ser	Gln	Glu	Cys	Tyr	Phe	Asp	Pro		
305					310					315					320		
Glu	Leu	Tyr	Arg	Ser	Thr	Gly	His	Gly	Gly	His	Cys	Thr	Asn	Cys	Arg		
				325					330						335		
Asp	Asn	Thr	Asp	Gly	Ala	Lys	Cys	Glu	Arg	Cys	Arg	Glu	Asn	Phe	Phe		
			340					345					350				
Arg	Leu	Gly	Asn	Thr	Glu	Ala	Cys	Ser	Pro	Cys	His	Cys	Ser	Pro	Val		
		355					360					365					
Gly	Ser	Leu	Ser	Thr	Gln	Cys	Asp	Ser	Tyr	Gly	Arg	Cys	Ser	Cys	Lys		
		370				375					380						
Pro	Gly	Val	Met	Gly	Asp	Lys	Cys	Asp	Arg	Cys	Gln	Pro	Gly	Phe	His		
385					390					395					400		
Ser	Leu	Thr	Glu	Ala	Gly	Cys	Arg	Pro	Cys	Ser	Cys	Asp	Pro	Ser	Gly		
				405					410					415			
Ser	Thr	Asp	Glu	Cys	Asn	Val	Glu	Thr	Gly	Arg	Cys	Val	Cys	Lys	Asp		
			420					425					430				
Asn	Val	Glu	Gly	Phe	Asn	Cys	Glu	Arg	Cys	Lys	Pro	Gly	Phe	Phe	Asn		
		435					440					445					
Leu	Glu	Ser	Ser	Asn	Pro	Lys	Gly	Cys	Thr	Pro	Cys	Phe	Cys	Phe	Gly		
	450					455					460						
His	Ser	Ser	Val	Cys	Thr	Asn	Ala	Val	Gly	Tyr	Ser	Val	Tyr	Asp	Ile		
465					470					475					480		
Ser	Ser	Thr	Phe	Gln	Ile	Asp	Glu	Asp	Gly	Trp	Arg	Val	Glu	Gln	Arg		
				485					490					495			
Asp	Gly	Ser	Glu	Ala	Ser	Leu	Glu	Trp	Ser	Ser	Asp	Arg	Gln	Tyr	Ile		
			500					505					510				
Ala	Val	Ile	Ser	Asp	Ser	Tyr	Phe	Pro	Arg	Tyr	Phe	Ile	Ala	Pro	Val		
		515					520					525					
Lys	Phe	Leu	Gly	Asn	Gln	Val	Leu	Ser	Tyr	Gly	Gln	Asn	Leu	Ser	Phe		
	530					535					540						
Ser	Phe	Arg	Val	Asp	Arg	Arg	Asp	Thr	Arg	Leu	Ser	Ala	Glu	Asp	Leu		
545					550					555					560		
Val	Leu	Glu	Gly	Ala	Gly	Leu	Arg	Val	Ser	Val	Pro	Leu	Ile	Ala	Gln		
				565					570					575			
Gly	Asn	Ser	Tyr	Pro	Ser	Glu	Thr	Thr	Val	Lys	Tyr	Ile	Phe	Arg	Leu		
			580					585					590				

His	Glu	Ala	Thr	Asp	Tyr	Pro	Trp	Arg	Pro	Ala	Leu	Ser	Pro	Phe	Glu	595	600	605
Phe	Gln	Lys	Leu	Leu	Asn	Asn	Leu	Thr	Ser	Ile	Lys	Ile	Arg	Gly	Thr	610	615	620
Tyr	Ser	Glu	Arg	Ser	Ala	Gly	Tyr	Leu	Asp	Asp	Val	Thr	Leu	Gln	Ser	625	630	635
Ala	Arg	Pro	Gly	Pro	Gly	Val	Pro	Ala	Thr	Trp	Val	Glu	Ser	Cys	Thr	645	650	655
Cys	Pro	Val	Gly	Tyr	Gly	Gly	Gln	Phe	Cys	Glu	Thr	Cys	Leu	Pro	Gly	660	665	670
Tyr	Arg	Arg	Glu	Thr	Pro	Ser	Leu	Gly	Pro	Tyr	Ser	Pro	Cys	Val	Leu	675	680	685
Cys	Thr	Cys	Asn	Gly	His	Ser	Glu	Thr	Cys	Asp	Pro	Glu	Thr	Gly	Val	690	695	700
Cys	Asp	Cys	Arg	Asp	Asn	Thr	Ala	Gly	Pro	His	Cys	Glu	Lys	Cys	Ser	705	710	715
Asp	Gly	Tyr	Tyr	Gly	Asp	Ser	Thr	Leu	Gly	Thr	Ser	Ser	Asp	Cys	Gln	725	730	735
Pro	Cys	Pro	Cys	Pro	Gly	Gly	Ser	Ser	Cys	Ala	Ile	Val	Pro	Lys	Thr	740	745	750
Lys	Glu	Val	Val	Cys	Thr	His	Cys	Pro	Thr	Gly	Thr	Ala	Gly	Lys	Arg	755	760	765
Cys	Glu	Leu	Cys	Asp	Asp	Gly	Tyr	Phe	Gly	Asp	Pro	Leu	Gly	Ser	Asn	770	775	780
Gly	Pro	Val	Arg	Leu	Cys	Arg	Pro	Cys	Gln	Cys	Asn	Asp	Asn	Ile	Asp	785	790	795
Pro	Asn	Ala	Val	Gly	Asn	Cys	Asn	Arg	Leu	Thr	Gly	Glu	Cys	Leu	Lys	805	810	815
Cys	Ile	Tyr	Asn	Thr	Ala	Gly	Phe	Tyr	Cys	Asp	Arg	Cys	Lys	Glu	Gly	820	825	830
Phe	Phe	Gly	Asn	Pro	Leu	Ala	Pro	Asn	Pro	Ala	Asp	Lys	Cys	Lys	Ala	835	840	845
Cys	Ala	Cys	Asn	Tyr	Gly	Thr	Val	Gln	Gln	Gln	Ser	Ser	Cys	Asn	Pro	850	855	860
Val	Thr	Gly	Gln	Cys	Gln	Cys	Leu	Pro	His	Val	Ser	Gly	Arg	Asp	Cys	865	870	875
Gly	Thr	Cys	Asp	Pro	Gly	Tyr	Tyr	Asn	Leu	Gln	Ser	Gly	Gln	Gly	Cys	885	890	895
Glu	Arg	Cys	Asp	Cys	His	Ala	Leu	Gly	Ser	Thr	Asn	Gly	Gln	Cys	Asp	900	905	910
Ile	Arg	Thr	Gly	Gln	Cys	Glu	Cys	Gln	Pro	Gly	Ile	Thr	Gly	Gln	His			

915	920	925
Cys Glu Arg Cys Glu Thr Asn His Phe Gly Phe Gly Pro Glu Gly Cys		
930	935	940
Lys Pro Cys Asp Cys His His Glu Gly Ser Leu Ser Leu Gln Cys Lys		
945	950	955
Asp Asp Gly Arg Cys Glu Cys Arg Glu Gly Phe Val Gly Asn Arg Cys		
965	970	975
Asp Gln Cys Glu Glu Asn Tyr Phe Tyr Asn Arg Ser Trp Pro Gly Cys		
980	985	990
Gln Glu Cys Pro Ala Cys Tyr Arg Leu Val Lys Asp Lys Ala Ala Glu		
995	1000	1005
His Arg Val Lys Leu Gln Glu Leu Glu Ser Leu Ile Ala Asn Leu Gly		
1010	1015	1020
Thr Gly Asp Asp Met Val Thr Asp Gln Ala Phe Glu Asp Arg Leu Lys		
1025	1030	1035
Glu Ala Glu Arg Glu Val Thr Asp Leu Leu Arg Glu Ala Gln Glu Val		
1045	1050	1055
Lys Asp Val Asp Gln Asn Leu Met Asp Arg Leu Gln Arg Val Asn Ser		
1060	1065	1070
Ser Leu His Ser Gln Ile Ser Arg Leu Gln Asn Ile Arg Asn Thr Ile		
1075	1080	1085
Glu Glu Thr Gly Ile Leu Ala Glu Arg Ala Arg Ser Arg Val Glu Ser		
1090	1095	1100
Thr Glu Gln Leu Ile Glu Ile Ala Ser Arg Glu Leu Glu Lys Ala Lys		
1105	1110	1115
Met Ala Ala Asn Val Ser Ile Thr Gln Pro Glu Ser Thr Gly Glu Pro		
1125	1130	1135
Asn Asn Met Thr Leu Leu Ala Glu Glu Ala Arg Arg Leu Ala Glu Arg		
1140	1145	1150
His Lys Gln Glu Ala Asp Asp Ile Val Arg Val Ala Lys Thr Ala Asn		
1155	1160	1165
Glu Thr Ser Ala Glu Ala Tyr Asn Leu Leu Leu Arg Thr Leu Ala Gly		
1170	1175	1180
Glu Asn Gln Thr Ala Leu Glu Ile Glu Glu Leu Asn Arg Lys Tyr Glu		
1185	1190	1195
Gln Ala Lys Asn Ile Ser Gln Asp Leu Glu Lys Gln Ala Ala Arg Val		
1205	1210	1215
His Glu Glu Ala Lys Arg Ala Gly Asp Lys Ala Val Glu Ile Tyr Ala		
1220	1225	1230
Ser Val Ala Gln Leu Thr Pro Val Asp Ser Glu Ala Leu Glu Asn Glu		
1235	1240	1245

Ala Asn Lys Ile Lys Lys Glu Ala Ala Asp Leu Asp Arg Leu Ile Asp  
1250 1255 1260

Gln Lys Leu Lys Asp Tyr Glu Asp Leu Arg Glu Asp Met Arg Gly Lys  
1265 1270 1275 1280

Glu His Glu Val Lys Asn Leu Leu Glu Lys Gly Lys Ala Glu Gln Gln  
1285 1290 1295

Thr Ala Asp Gln Leu Leu Ala Arg Ala Asp Ala Ala Lys Ala Leu Ala  
1300 1305 1310

Glu Glu Ala Ala Lys Lys Gly Arg Ser Thr Leu Gln Glu Ala Asn Asp  
1315 1320 1325

Ile Leu Asn Asn Leu Lys Asp Phe Asp Arg Arg Val Asn Asp Asn Lys  
1330 1335 1340

Thr Ala Ala Glu Glu Ala Leu Arg Arg Ile Pro Ala Ile Asn Arg Thr  
1345 1350 1355 1360

Ile Ala Glu Ala Asn Glu Lys Thr Arg Glu Ala Gln Leu Ala Leu Gly  
1365 1370 1375

Asn Ala Ala Ala Asp Ala Thr Glu Ala Lys Asn Lys Ala His Glu Ala  
1380 1385 1390

Glu Arg Ile Ala Ser Ala Ala Gln Lys Asn Ala Thr Ser Thr Lys Ala  
1395 1400 1405

Asp Ala Glu Arg Thr Phe Gly Glu Val Thr Asp Leu Asp Asn Glu Val  
1410 1415 1420

Asn Gly Met Leu Arg Gln Leu Glu Glu Ala Glu Asn Glu Leu Lys Arg  
1425 1430 1435 1440

Lys Gln Asp Asp Ala Asp Gln Asp Met Met Met Ala Gly Met Ala Ser  
1445 1450 1455

Gln Ala Ala Gln Glu Ala Glu Leu Asn Ala Arg Lys Ala Lys Asn Ser  
1460 1465 1470

Val Ser Ser Leu Leu Ser Gln Leu Asn Asn Leu Leu Asp Gln Leu Gly  
1475 1480 1485

Gln Leu Asp Thr Val Asp Leu Asn Lys Leu Asn Glu Ile Glu Gly Ser  
1490 1495 1500

Leu Asn Lys Ala Lys Asp Glu Met Lys Ala Ser Asp Leu Asp Arg Lys  
1505 1510 1515 1520

Val Ser Asp Leu Glu Ser Glu Ala Arg Lys Gln Glu Ala Ala Ile Met  
1525 1530 1535

Asp Tyr Asn Arg Asp Ile Ala Glu Ile Ile Lys Asp Ile His Asn Leu  
1540 1545 1550

Glu Asp Ile Lys Lys Thr Leu Pro Thr Gly Cys Phe Asn Thr Pro Ser  
1555 1560 1565

Ile Glu Lys Pro  
1570

<210> 21  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer KZK1

<400> 21  
gccaccatgg cgaagcggct ctg 23

<210> 22  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer Ba3r

<400> 22  
aagggcagga tccactgggg 20

<210> 23  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer Bam4

<400> 23  
ctactgcgaa gctggctctt 20

<210> 24  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer Bcllr

<400> 24  
ccaggtggtc ctgggtatc 19

<210> 25  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer Bcl2

<400> 25

gcgacaactg cctcctctac	20
<210> 26	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer Not4r	
<400> 26	
agtgggttcc caaagaatcc	20
<210> 27	
<211> 19	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer Bpu1F	
<400> 27	
cctctgtgac gagctcacg	19
<210> 28	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer D29	
<400> 28	
gatgtgtccc ttgtcagtgc cat	23
<210> 29	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer D301	
<400> 29	
tgctgtgttc agccgcttga ggt	23
<210> 30	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Primer Not3	
<400> 30	
ctctcagtgc cttccaacaa c	21

<210> 31  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer Sal4r

<400> 31  
 ctgactgtcg aagctgatgc 20

<210> 32  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer Sal5

<400> 32  
 ggaggtggtc agcctctaca 20

<210> 33  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer FLAG1

<400> 33  
 ttacttgtca tcgtcgtcct tgtagtcggc ggctgggcag 40

<210> 34  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Primer m19R

<400> 34  
 aatggtgccca gactcagg 18

<210> 35  
 <211> 8296  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (68)..(8296)

<220>  
 <221> sig\_peptide



<222> (68)..(173)

<400> 35

agacccgcgcg ggctcccgcc gcgcgcgctg tccctggagc tcggggacgc ggcccggagc 60

cggggaag atg gcg aag cgg ctg tgc gcg ggg agc gca ctg tgt gtt cgc 109  
Met Ala Lys Arg Leu Cys Ala Gly Ser Ala Leu Cys Val Arg  
1 5 10

ggc ccc cgg ggc ccc gcg ccg ctg ctg ctg gtc ggg ctg gcg ctg ctg 157  
Gly Pro Arg Gly Pro Ala Pro Leu Leu Leu Val Gly Leu Ala Leu Leu  
15 20 25 30

ggc gcg gcg cgg gcg cgg gag gag gcg ggc ggc ggc ttc agc ctg cac 205  
Gly Ala Ala Arg Ala Arg Glu Glu Ala Gly Gly Gly Phe Ser Leu His  
35 40 45

ccg ccc tac ttc aac ctg gcc gag ggc gcc cgc atc gcc gcc tcc gcg 253  
Pro Pro Tyr Phe Asn Leu Ala Glu Gly Ala Arg Ile Ala Ala Ser Ala  
50 55 60

acc tgc gga gag gag gcc ccg gcg cgc ggc tcc ccg cgc ccc acc gag 301  
Thr Cys Gly Glu Glu Ala Pro Ala Arg Gly Ser Pro Arg Pro Thr Glu  
65 70 75

gac ctt tac tgc aag ctg gta ggg ggc ccc gtg gcc ggc ggc gac ccc 349  
Asp Leu Tyr Cys Lys Leu Val Gly Gly Pro Val Ala Gly Gly Asp Pro  
80 85 90

aac cag acc atc cgg ggc cag tac tgc gac atc tgc acg gct gcc aac 397  
Asn Gln Thr Ile Arg Gly Gln Tyr Cys Asp Ile Cys Thr Ala Ala Asn  
95 100 105 110

agc aac aag gca cac ccc gcg agc aat gcc atc gat ggc acg gag cgc 445  
Ser Asn Lys Ala His Pro Ala Ser Asn Ala Ile Asp Gly Thr Glu Arg  
115 120 125

tgg tgg cag agt cca ccg ctg tcc cgc ggc ctg gag tac aac gag gtc 493  
Trp Trp Gln Ser Pro Pro Leu Ser Arg Gly Leu Glu Tyr Asn Glu Val  
130 135 140

aac gtc acc ctg gac ctg ggc cag gtc ttc cac gtg gcc tac gtc ctg 541  
Asn Val Thr Leu Asp Leu Gly Gln Val Phe His Val Ala Tyr Val Leu  
145 150 155

atc aag ttt gcc aac tca ccc cgg ccg gac ctg tgg gtg ctg gag cgg 589  
Ile Lys Phe Ala Asn Ser Pro Arg Pro Asp Leu Trp Val Leu Glu Arg  
160 165 170

tcc atg gac ttc ggc cgc acc tac cag ccc tgg cag ttc ttt gcc tcc 637  
Ser Met Asp Phe Gly Arg Thr Tyr Gln Pro Trp Gln Phe Phe Ala Ser  
175 180 185 190

tct aag agg gac tgt ctg gag cgg ttc ggg cca cag acg ctg gag cgc 685  
Ser Lys Arg Asp Cys Leu Glu Arg Phe Gly Pro Gln Thr Leu Glu Arg  
195 200 205

atc aca cgg gac gac gca gcc atc tgc acc acc gag tac tca cgc atc 733  
Ile Thr Arg Asp Asp Ala Ala Ile Cys Thr Thr Glu Tyr Ser Arg Ile  
210 215 220

gtg ccc ctg gag aac gga gag atc gtg gtg tcc ctg gtg aac gga cgt	781
Val Pro Leu Glu Asn Gly Glu Ile Val Val Ser Leu Val Asn Gly Arg	
225 230 235	
ccg ggc gcc atg aat ttc tcc tac tcg ccg ctg cta cgt gag ttc acc	829
Pro Gly Ala Met Asn Phe Ser Tyr Ser Pro Leu Leu Arg Glu Phe Thr	
240 245 250	
aag gcc acc aac gtc cgc ctg cgc ttc ctg cgt acc aac acg ctg ctg	877
Lys Ala Thr Asn Val Arg Leu Arg Phe Leu Arg Thr Asn Thr Leu Leu	
255 260 265 270	
ggc cat ctc atg ggg aag gcg ctg cgg gac ccc acg gtc acc cgc cgg	925
Gly His Leu Met Gly Lys Ala Leu Arg Asp Pro Thr Val Thr Arg Arg	
275 280 285	
tat tat tac agc atc aag gat atc agc atc gga ggc cgc tgt gtc tgc	973
Tyr Tyr Tyr Ser Ile Lys Asp Ile Ser Ile Gly Gly Arg Cys Val Cys	
290 295 300	
cac ggc cac gcg gat gcc tgc gat gcc aaa gac ccc acg gac ccg ttc	1021
His Gly His Ala Asp Ala Cys Asp Ala Lys Asp Pro Thr Asp Pro Phe	
305 310 315	
agg ctg cag tgc acc tgc cag cac aac acc tgc ggg ggc acc tgc gac	1069
Arg Leu Gln Cys Thr Cys Gln His Asn Thr Cys Gly Gly Thr Cys Asp	
320 325 330	
cgc tgc tgc ccc ggc ttc aat cag cag ccg tgg aag cct gcg act gcc	1117
Arg Cys Cys Pro Gly Phe Asn Gln Gln Pro Trp Lys Pro Ala Thr Ala	
335 340 345 350	
aac agt gcc aac gag tgc cag tcc tgt aac tgc tac ggc cat gcc acc	1165
Asn Ser Ala Asn Glu Cys Gln Ser Cys Asn Cys Tyr Gly His Ala Thr	
355 360 365	
gac tgt tac tac gac cct gag gtg gac cgg cgc cgc gcc agc cag agc	1213
Asp Cys Tyr Tyr Asp Pro Glu Val Asp Arg Arg Arg Ala Ser Gln Ser	
370 375 380	
ctg gat ggc acc tat cag ggt ggg ggt gtc tgt atc gac tgc cag cac	1261
Leu Asp Gly Thr Tyr Gln Gly Gly Gly Val Cys Ile Asp Cys Gln His	
385 390 395	
cac acc gcc ggc gtc aac tgt gag cgc tgc ctg ccc ggc ttc tac cgc	1309
His Thr Ala Gly Val Asn Cys Glu Arg Cys Leu Pro Gly Phe Tyr Arg	
400 405 410	
tct ccc aac cac cct ctc gac tcg ccc cac gtc tgc cgc cgc tgc aac	1357
Ser Pro Asn His Pro Leu Asp Ser Pro His Val Cys Arg Arg Cys Asn	
415 420 425 430	
tgc gag tcc gac ttc acg gat ggc acc tgc gag gac ctg acg ggt cga	1405
Cys Glu Ser Asp Phe Thr Asp Gly Thr Cys Glu Asp Leu Thr Gly Arg	
435 440 445	
tgc tac tgc cgg ccc aac ttc tct ggg gag cgg tgt gac gtg tgt gcc	1453
Cys Tyr Cys Arg Pro Asn Phe Ser Gly Glu Arg Cys Asp Val Cys Ala	
450 455 460	
gag ggc ttc acg ggc ttc cca agc tgc tac ccg acg ccc tcg tcc tcc	1501

Glu	Gly	Phe	Thr	Gly	Phe	Pro	Ser	Cys	Tyr	Pro	Thr	Pro	Ser	Ser	Ser		
		465					470					475					
aat	gac	acc	agg	gag	cag	gtg	ctg	cca	gct	ggc	cag	att	gtg	aat	tgt	1549	
Asn	Asp	Thr	Arg	Glu	Gln	Val	Leu	Pro	Ala	Gly	Gln	Ile	Val	Asn	Cys		
	480					485					490						
gac	tgc	agc	gcg	gca	ggg	acc	cag	ggc	aac	gcc	tgc	cgg	aag	gac	cca	1597	
Asp	Cys	Ser	Ala	Ala	Gly	Thr	Gln	Gly	Asn	Ala	Cys	Arg	Lys	Asp	Pro		
	495				500					505					510		
agg	gtg	gga	cgc	tgt	ctg	tgc	aaa	ccc	aac	ttc	caa	ggc	acc	cat	tgt	1645	
Arg	Val	Gly	Arg	Cys	Leu	Cys	Lys	Pro	Asn	Phe	Gln	Gly	Thr	His	Cys		
				515					520					525			
gag	ctc	tgc	gcg	cca	ggg	ttc	tac	ggc	ccc	ggc	tgc	cag	ccc	tgc	cag	1693	
Glu	Leu	Cys	Ala	Pro	Gly	Phe	Tyr	Gly	Pro	Gly	Cys	Gln	Pro	Cys	Gln		
			530					535					540				
tgt	tcc	agc	cct	gga	gtg	gcc	gat	gac	cgc	tgt	gac	cct	gac	aca	ggc	1741	
Cys	Ser	Ser	Pro	Gly	Val	Ala	Asp	Asp	Arg	Cys	Asp	Pro	Asp	Thr	Gly		
		545					550					555					
cag	tgc	agg	tgc	cga	gtg	ggc	ttc	gag	ggg	gcc	aca	tgt	gat	cgc	tgt	1789	
Gln	Cys	Arg	Cys	Arg	Val	Gly	Phe	Glu	Gly	Ala	Thr	Cys	Asp	Arg	Cys		
	560					565					570						
gcc	ccc	ggc	tac	ttt	cac	ttc	cct	ctc	tgc	cag	ttg	tgt	ggc	tgc	agc	1837	
Ala	Pro	Gly	Tyr	Phe	His	Phe	Pro	Leu	Cys	Gln	Leu	Cys	Gly	Cys	Ser		
	575				580					585					590		
cct	gca	gga	acc	ttg	ccc	gag	ggc	tgc	gat	gag	gcc	ggc	cgc	tgc	cta	1885	
Pro	Ala	Gly	Thr	Leu	Pro	Glu	Gly	Cys	Asp	Glu	Ala	Gly	Arg	Cys	Leu		
				595				600						605			
tgc	cag	cct	gag	ttt	gct	gga	cct	cat	tgt	gac	cgg	tgc	cgc	cct	ggc	1933	
Cys	Gln	Pro	Glu	Phe	Ala	Gly	Pro	His	Cys	Asp	Arg	Cys	Arg	Pro	Gly		
			610					615					620				
tac	cat	ggc	ttc	ccc	aac	tgc	caa	gca	tgc	acc	tgc	gac	cct	cgg	gga	1981	
Tyr	His	Gly	Phe	Pro	Asn	Cys	Gln	Ala	Cys	Thr	Cys	Asp	Pro	Arg	Gly		
		625				630						635					
gcc	ctg	gac	cag	ctc	tgt	ggg	gcg	gga	ggc	ttg	tgc	cgc	tgc	cgc	ccc	2029	
Ala	Leu	Asp	Gln	Leu	Cys	Gly	Ala	Gly	Gly	Leu	Cys	Arg	Cys	Arg	Pro		
	640					645				650							
ggc	tac	aca	ggc	act	gcc	tgc	cag	gaa	tgc	agc	ccc	ggc	ttt	cac	ggc	2077	
Gly	Tyr	Thr	Gly	Thr	Ala	Cys	Gln	Glu	Cys	Ser	Pro	Gly	Phe	His	Gly		
	655				660					665					670		
ttc	ccc	agc	tgt	gtc	ccc	tgc	cac	tgc	tct	gct	gaa	ggc	tcc	ctg	cac	2125	
Phe	Pro	Ser	Cys	Val	Pro	Cys	His	Cys	Ser	Ala	Glu	Gly	Ser	Leu	His		
				675					680					685			
gca	gcc	tgt	gac	ccc	cgg	agt	ggg	cag	tgc	agc	tgc	cgg	ccc	cgt	gtg	2173	
Ala	Ala	Cys	Asp	Pro	Arg	Ser	Gly	Gln	Cys	Ser	Cys	Arg	Pro	Arg	Val		
			690					695					700				
acg	ggg	ctg	cgg	tgt	gac	acg	tgt	gtg	ccc	ggc	tac	aac	ttc	ccc		2221	
Thr	Gly	Leu	Arg	Cys	Asp	Thr	Cys	Val	Pro	Gly	Ala	Tyr	Asn	Phe	Pro		

705	710	715	
tac tgc gaa gct ggc tct tgc cac cct gcc ggt ctg gcc cca gtg gat Tyr Cys Glu Ala Gly Ser Cys His Pro Ala Gly Leu Ala Pro Val Asp 720 725 730			2269
cct gcc ctt cct gag gca cag gtt ccc tgt atg tgc cgg gct cac gtg Pro Ala Leu Pro Glu Ala Gln Val Pro Cys Met Cys Arg Ala His Val 735 740 745 750			2317
gag ggg ccg agc tgt gac cgc tgc aaa cct ggg ttc tgg gga ctg agc Glu Gly Pro Ser Cys Asp Arg Cys Lys Pro Gly Phe Trp Gly Leu Ser 755 760 765			2365
ccc agc aac ccc gag ggc tgt acc cgc tgc agc tgc gac ctc agg ggc Pro Ser Asn Pro Glu Gly Cys Thr Arg Cys Ser Cys Asp Leu Arg Gly 770 775 780			2413
aca ctg ggt gga gtt gct gag tgc cag ccg ggc acc ggc cag tgc ttc Thr Leu Gly Gly Val Ala Glu Cys Gln Pro Gly Thr Gly Gln Cys Phe 785 790 795			2461
tgc aag ccc cac gtg tgc ggc cag gcc tgc gcg tcc tgc aag gat ggc Cys Lys Pro His Val Cys Gly Gln Ala Cys Ala Ser Cys Lys Asp Gly 800 805 810			2509
ttc ttt gga ctg gat cag gct gac tat ttt ggc tgc cgc agc tgc cgg Phe Phe Gly Leu Asp Gln Ala Asp Tyr Phe Gly Cys Arg Ser Cys Arg 815 820 825 830			2557
tgt gac att ggc ggt gca ctg ggc cag agc tgt gaa ccg agg acg ggc Cys Asp Ile Gly Gly Ala Leu Gly Gln Ser Cys Glu Pro Arg Thr Gly 835 840 845			2605
gtc tgc cgg tgc cgc ccc aac acc cag ggc ccc acc tgc agc gag cct Val Cys Arg Cys Arg Pro Asn Thr Gln Gly Pro Thr Cys Ser Glu Pro 850 855 860			2653
gcg agg gac cac tac ctc ccg gac ctg cac cac ctg cgc ctg gag ctg Ala Arg Asp His Tyr Leu Pro Asp Leu His His Leu Arg Leu Glu Leu 865 870 875			2701
gag gag gct gcc aca cct gag ggt cac gcc gtg cgc ttt ggc ttc aac Glu Glu Ala Ala Thr Pro Glu Gly His Ala Val Arg Phe Gly Phe Asn 880 885 890			2749
ccc ctc gag ttc gag aac ttc agc tgg agg ggc tac gcg cag atg gca Pro Leu Glu Phe Glu Asn Phe Ser Trp Arg Gly Tyr Ala Gln Met Ala 895 900 905 910			2797
cct gtc cag ccc agg atc gtg gcc agg ctg aac ctg acc tcc ccc gac Pro Val Gln Pro Arg Ile Val Ala Arg Leu Asn Leu Thr Ser Pro Asp 915 920 925			2845
ctt ttc tgg ctc gtc ttc cga tac gtc aac cgg ggg gcc atg agt gtg Leu Phe Trp Leu Val Phe Arg Tyr Val Asn Arg Gly Ala Met Ser Val 930 935 940			2893
agc ggg ccg gtc tct gtg cga gag gag ggc agg tcg gcc gcc tgt gcc Ser Gly Arg Val Ser Val Arg Glu Glu Gly Arg Ser Ala Ala Cys Ala 945 950 955			2941

aac tgc aca gca cag agt cag ccc gtg gcc ttc cca ccc agc acg gag Asn Cys Thr Ala Gln Ser Gln Pro Val Ala Phe Pro Pro Ser Thr Glu 960 965 970	2989
cct gcc ttc atc acc gtg ccc cag agg ggc ttc gga gag ccc ttt gtg Pro Ala Phe Ile Thr Val Pro Gln Arg Gly Phe Gly Glu Pro Phe Val 975 980 985 990	3037
ctg aac cct ggc acc tgg gcc ctg cgt gtg gag gcc gaa ggg gtg ctc Leu Asn Pro Gly Thr Trp Ala Leu Arg Val Glu Ala Glu Gly Val Leu 995 1000 1005	3085
ctg gac tac gtg gtt ctg ctg cct agc gca tac tac gag gcg gcg ctc Leu Asp Tyr Val Val Leu Leu Pro Ser Ala Tyr Tyr Glu Ala Ala Leu 1010 1015 1020	3133
ctg cag ctg cgg gtg act gag gcc tgc aca tac cgt ccc tct gcc cag Leu Gln Leu Arg Val Thr Glu Ala Cys Thr Tyr Arg Pro Ser Ala Gln 1025 1030 1035	3181
cag tct ggc gac aac tgc ctc ctc tac aca cac ctc ccc ctg gat ggc Gln Ser Gly Asp Asn Cys Leu Leu Tyr Thr His Leu Pro Leu Asp Gly 1040 1045 1050	3229
ttc ccc tcg gcc gcc ggg ctg gag gcc ctg tgt cgc cag gac aac agc Phe Pro Ser Ala Ala Gly Leu Glu Ala Leu Cys Arg Gln Asp Asn Ser 1055 1060 1065 1070	3277
ctg ccc cgg ccc tgc ccc acg gag cag ctc agc ccg tcg cac ccg cca Leu Pro Arg Pro Cys Pro Thr Glu Gln Leu Ser Pro Ser His Pro Pro 1075 1080 1085	3325
ctg atc acc tgc acg ggc agt gat gtg gac gtc cag ctt caa gtg gca Leu Ile Thr Cys Thr Gly Ser Asp Val Asp Val Gln Leu Gln Val Ala 1090 1095 1100	3373
gtg cca cag cca ggc cgc tat gcc cta gtg gtg gag tac gcc aat gag Val Pro Gln Pro Gly Arg Tyr Ala Leu Val Val Glu Tyr Ala Asn Glu 1105 1110 1115	3421
gat gcc cgc cag gag gtg ggc gtg gct gtg cac acc cca cag cgg gcc Asp Ala Arg Gln Glu Val Gly Val Ala Val His Thr Pro Gln Arg Ala 1120 1125 1130	3469
ccc cag cag ggg ctg ctc tcc ctg cac ccc tgc ctg tac agc acc ctg Pro Gln Gln Gly Leu Leu Ser Leu His Pro Cys Leu Tyr Ser Thr Leu 1135 1140 1145 1150	3517
tgc cgg ggc act gcc cgg gat acc cag gac cac ctg gct gtc ttc cac Cys Arg Gly Thr Ala Arg Asp Thr Gln Asp His Leu Ala Val Phe His 1155 1160 1165	3565
ctg gac tcg gag gcc agc gtg agg ctc aca gcc gag cag gca cgc ttc Leu Asp Ser Glu Ala Ser Val Arg Leu Thr Ala Glu Gln Ala Arg Phe 1170 1175 1180	3613
ttc ctg cac ggg gtc act ctg gtg ccc att gag gag ttc agc ccg gag Phe Leu His Gly Val Thr Leu Val Pro Ile Glu Glu Phe Ser Pro Glu 1185 1190 1195	3661

ttc gtg gag ccc cgg gtc agc tgc atc agc agc cac ggc gcc ttt ggc	3709
Phe Val Glu Pro Arg Val Ser Cys Ile Ser Ser His Gly Ala Phe Gly	
1200 1205 1210	
ccc aac agt gcc gcc tgt ctg ccc tcg cgc ttc cca aag ccg ccc cag	3757
Pro Asn Ser Ala Ala Cys Leu Pro Ser Arg Phe Pro Lys Pro Pro Gln	
1215 1220 1225 1230	
ccc atc atc ctc agg gac tgc cag gtg atc ccg ctg ccg ccc ggc ctc	3805
Pro Ile Ile Leu Arg Asp Cys Gln Val Ile Pro Leu Pro Pro Gly Leu	
1235 1240 1245	
ccg ctg acc cac ggc cag gat ctc act cca gcc acg tcc cca gct gga	3853
Pro Leu Thr His Ala Gln Asp Leu Thr Pro Ala Thr Ser Pro Ala Gly	
1250 1255 1260	
ccc cga cct cgg ccc ccc acc gct gtg gac cct gat gca gag ccc acc	3901
Pro Arg Pro Arg Pro Pro Thr Ala Val Asp Pro Asp Ala Glu Pro Thr	
1265 1270 1275	
ctg ctg cgt gag ccc cag gcc acc gtg gtc ttc acc acc cat gtg ccc	3949
Leu Leu Arg Glu Pro Gln Ala Thr Val Val Phe Thr Thr His Val Pro	
1280 1285 1290	
acg ctg ggc cgc tat gcc ttc ctg ctg cac ggc tac cag cca gcc cac	3997
Thr Leu Gly Arg Tyr Ala Phe Leu Leu His Gly Tyr Gln Pro Ala His	
1295 1300 1305 1310	
ccc acc ttc ccc gtg gaa gtc ctc atc aac gcc ggc cgc gtg tgg cag	4045
Pro Thr Phe Pro Val Glu Val Leu Ile Asn Ala Gly Arg Val Trp Gln	
1315 1320 1325	
ggc cac gcc aac gcc agc ttc tgt cca cat ggc tac ggc tgc cgc acc	4093
Gly His Ala Asn Ala Ser Phe Cys Pro His Gly Tyr Gly Cys Arg Thr	
1330 1335 1340	
ctg gtg gtg tgt gag ggc cag gcc ctg ctg gac gtg acc cac agc gag	4141
Leu Val Val Cys Glu Gly Gln Ala Leu Leu Asp Val Thr His Ser Glu	
1345 1350 1355	
ctc act gtg acc gtg cgt gtg ccc gag ggc cgg tgg ctc tgg ctg gat	4189
Leu Thr Val Thr Val Arg Val Pro Glu Gly Arg Trp Leu Trp Leu Asp	
1360 1365 1370	
tat gta ctc gtg gtc cct gag aac gtc tac agc ttt ggc tac ctc cgg	4237
Tyr Val Leu Val Val Pro Glu Asn Val Tyr Ser Phe Gly Tyr Leu Arg	
1375 1380 1385 1390	
gag gag ccc ctg gat aaa tcc tat gac ttc atc agc cac tgc gca gcc	4285
Glu Glu Pro Leu Asp Lys Ser Tyr Asp Phe Ile Ser His Cys Ala Ala	
1395 1400 1405	
cag ggc tac cac atc agc ccc agc agc tca tcc ctg ttc tgc cga aac	4333
Gln Gly Tyr His Ile Ser Pro Ser Ser Ser Ser Leu Phe Cys Arg Asn	
1410 1415 1420	
gct gct gct tcc ctc tcc ctc ttc tat aac aac gga gcc cgt cca tgt	4381
Ala Ala Ala Ser Leu Ser Leu Phe Tyr Asn Asn Gly Ala Arg Pro Cys	
1425 1430 1435	
ggc tgc cac gaa gta ggt gct aca ggc ccc acg tgt gag ccc ttc ggg	4429

Gly Cys His Glu Val Gly Ala Thr Gly Pro Thr Cys Glu Pro Phe Gly	
1440	1445 1450
ggc cag tgt ccc tgc cat gcc cat gtc att ggc cgt gac tgc tcc cgc	4477
Gly Gln Cys Pro Cys His Ala His Val Ile Gly Arg Asp Cys Ser Arg	
1455	1460 1465 1470
tgt gcc acc gga tac tgg ggc ttc ccc aac tgc agg ccc tgt gac tgc	4525
Cys Ala Thr Gly Tyr Trp Gly Phe Pro Asn Cys Arg Pro Cys Asp Cys	
	1475 1480 1485
ggg gcc cgc ctc tgt gac gag ctc acg ggc cag tgc atc tgc ccg cca	4573
Gly Ala Arg Leu Cys Asp Glu Leu Thr Gly Gln Cys Ile Cys Pro Pro	
	1490 1495 1500
cgc acc atc ccg ccc gac tgc ctg ctg tgc cag ccc cag acc ttt ggc	4621
Arg Thr Ile Pro Pro Asp Cys Leu Leu Cys Gln Pro Gln Thr Phe Gly	
	1505 1510 1515
tgc cac ccc ctg gtc ggc tgt gag gag tgt aac tgc tca ggg ccc ggc	4669
Cys His Pro Leu Val Gly Cys Glu Glu Cys Asn Cys Ser Gly Pro Gly	
	1520 1525 1530
atc cag gag ctc aca gac cct acc tgt gac aca gac agc ggc cag tgc	4717
Ile Gln Glu Leu Thr Asp Pro Thr Cys Asp Thr Asp Ser Gly Gln Cys	
	1535 1540 1545 1550
aag tgc aga ccc aac gtg act ggg cgc cgc tgt gat acc tgc tct ccg	4765
Lys Cys Arg Pro Asn Val Thr Gly Arg Cys Asp Thr Cys Ser Pro	
	1555 1560 1565
ggc ttc cat ggc tac ccc cgc tgc cgc ccc tgt gac tgt cac gag gcg	4813
Gly Phe His Gly Tyr Pro Arg Cys Arg Pro Cys Asp Cys His Glu Ala	
	1570 1575 1580
ggc act gcg cct ggc gtg tgt gac ccc ctc aca ggg cag tgc tac tgt	4861
Gly Thr Ala Pro Gly Val Cys Asp Pro Leu Thr Gly Gln Cys Tyr Cys	
	1585 1590 1595
aag gag aac gtg cag ggc ccc aaa tgt gac cag tgc agc ctt ggg acc	4909
Lys Glu Asn Val Gln Gly Pro Lys Cys Asp Gln Cys Ser Leu Gly Thr	
	1600 1605 1610
ttc tca ctg gat gct gcc aac ccc aaa ggt tgc acc cgc tgc ttc tgc	4957
Phe Ser Leu Asp Ala Ala Asn Pro Lys Gly Cys Thr Arg Cys Phe Cys	
	1615 1620 1625 1630
ttt ggg gcc acg gag cgc tgc cgg agc tgc tcc tac acc cgc cag gag	5005
Phe Gly Ala Thr Glu Arg Cys Arg Ser Ser Ser Tyr Thr Arg Gln Glu	
	1635 1640 1645
ttc gtg gat atg gag gga tgg gtg ctg ctg agc act gac cgg cag gtg	5053
Phe Val Asp Met Glu Gly Trp Val Leu Leu Ser Thr Asp Arg Gln Val	
	1650 1655 1660
gtg ccc cac gag cgg cag cca ggg acg gag atg ctc cgt gca gac ctg	5101
Val Pro His Glu Arg Gln Pro Gly Thr Glu Met Leu Arg Ala Asp Leu	
	1665 1670 1675
cgg cac gtg cct gag gct gtg ccc gag gct ttc ccc gag ctg tac tgg	5149
Arg His Val Pro Glu Ala Val Pro Glu Ala Phe Pro Glu Leu Tyr Trp	

1680	1685	1690	
cag gcc cca ccc tcc tac ctg ggg gac cgg gtg tca tcc tac ggt ggg			5197
Gln Ala Pro Pro Ser Tyr Leu Gly Asp Arg Val Ser Ser Tyr Gly Gly			
1695	1700	1705	1710
acc ctc cgt tat gaa ctg cac tca gag acc cag cgg gga gat gtc ttt			5245
Thr Leu Arg Tyr Glu Leu His Ser Glu Thr Gln Arg Gly Asp Val Phe			
	1715	1720	1725
gtc ccc atg gag agc agg ccg gat gtg gtg ctg cag ggc aac cag atg			5293
Val Pro Met Glu Ser Arg Pro Asp Val Val Leu Gln Gly Asn Gln Met			
	1730	1735	1740
agc atc aca ttc ctg gag ccg gca tac ccc acg cct ggc cac gtt cac			5341
Ser Ile Thr Phe Leu Glu Pro Ala Tyr Pro Thr Pro Gly His Val His			
	1745	1750	1755
cgt ggg cag ctg cag ctg gtg gag ggg aac ttc cgg cat acg gag act			5389
Arg Gly Gln Leu Gln Leu Val Glu Gly Asn Phe Arg His Thr Glu Thr			
	1760	1765	1770
cgc aac act gtg tcc cgc gag gag ctc atg atg gtg ctg gcc agc ctg			5437
Arg Asn Thr Val Ser Arg Glu Glu Leu Met Met Val Leu Ala Ser Leu			
	1775	1780	1785
gag cag ctg cag atc cgt gcc ctc ttc tca cag atc tcc tcg gct gtc			5485
Glu Gln Leu Gln Ile Arg Ala Leu Phe Ser Gln Ile Ser Ser Ala Val			
	1795	1800	1805
tcc ctg cgc agg gtg gca ctg gag gtg gcc agc cca gca ggc cag ggg			5533
Ser Leu Arg Arg Val Ala Leu Glu Val Ala Ser Pro Ala Gly Gln Gly			
	1810	1815	1820
gcc ctg gcc agc aat gtg gag ctg tgc ctg tgc ccc gcc agc tac cgg			5581
Ala Leu Ala Ser Asn Val Glu Leu Cys Leu Cys Pro Ala Ser Tyr Arg			
	1825	1830	1835
ggg gac tca tgc cag gaa tgt gcc ccc ggc ttc tat cgg gac gtc aaa			5629
Gly Asp Ser Cys Gln Glu Cys Ala Pro Gly Phe Tyr Arg Asp Val Lys			
	1840	1845	1850
ggt ctc ttc ctg ggc cga tgt gtc cct tgt cag tgc cat gga cac tca			5677
Gly Leu Phe Leu Gly Arg Cys Val Pro Cys Gln Cys His Gly His Ser			
	1855	1860	1865
gac cgc tgc ctc cct ggc tct ggc gtc tgt gtg gac tgc cag cac aac			5725
Asp Arg Cys Leu Pro Gly Ser Gly Val Cys Val Asp Cys Gln His Asn			
	1875	1880	1885
acc gaa ggg gcc cac tgt gag cgc tgc cag gct ggc ttc atg agc agc			5773
Thr Glu Gly Ala His Cys Glu Arg Cys Gln Ala Gly Phe Met Ser Ser			
	1890	1895	1900
agg gac gac ccc agc gcc ccc tgt gtc agc tgc ccc tgc ccc ctc tca			5821
Arg Asp Asp Pro Ser Ala Pro Cys Val Ser Cys Pro Cys Pro Leu Ser			
	1905	1910	1915
gtg cct tcc aac aac ttc gcc gag ggc tgt gtc ctg cga ggc ggc cgc			5869
Val Pro Ser Asn Asn Phe Ala Glu Gly Cys Val Leu Arg Gly Gly Arg			
	1920	1925	1930



acc	cag	tgc	ctc	tgc	aaa	cct	ggt	tat	gca	ggt	gcc	tcc	tgc	gag	cgg	5917
Thr	Gln	Cys	Leu	Cys	Lys	Pro	Gly	Tyr	Ala	Gly	Ala	Ser	Cys	Glu	Arg	
1935					1940					1945					1950	
tgt	gcg	ccc	gga	ttc	ttt	ggg	aac	cca	ctg	gtg	ctg	ggc	agc	tcc	tgc	5965
Cys	Ala	Pro	Gly	Phe	Phe	Gly	Asn	Pro	Leu	Val	Leu	Gly	Ser	Ser	Cys	
				1955					1960					1965		
cag	cca	tgc	gac	tgc	agc	ggc	aac	ggt	gac	ccc	aac	ttg	ctc	ttc	agc	6013
Gln	Pro	Cys	Asp	Cys	Ser	Gly	Asn	Gly	Asp	Pro	Asn	Leu	Leu	Phe	Ser	
			1970					1975					1980			
gac	tgc	gac	ccc	ctg	acg	ggc	gcc	tgc	cgt	ggc	tgc	ctg	cgc	cac	acc	6061
Asp	Cys	Asp	Pro	Leu	Thr	Gly	Ala	Cys	Arg	Gly	Cys	Leu	Arg	His	Thr	
		1985					1990					1995				
act	ggg	ccc	cgc	tgc	gag	atc	tgt	gcc	ccc	ggc	ttc	tac	ggc	aac	gcc	6109
Thr	Gly	Pro	Arg	Cys	Glu	Ile	Cys	Ala	Pro	Gly	Phe	Tyr	Gly	Asn	Ala	
	2000					2005					2010					
ctg	ctg	ccc	ggc	aac	tgc	acc	cgg	tgc	gac	tgt	acc	cca	tgt	ggg	aca	6157
Leu	Leu	Pro	Gly	Asn	Cys	Thr	Arg	Cys	Asp	Cys	Thr	Pro	Cys	Gly	Thr	
2015				2020						2025					2030	
gag	gcc	tgc	gac	ccc	cac	agc	ggg	cac	tgc	ctg	tgc	aag	gcg	ggc	gtg	6205
Glu	Ala	Cys	Asp	Pro	His	Ser	Gly	His	Cys	Leu	Cys	Lys	Ala	Gly	Val	
			2035					2040					2045			
act	ggg	cgg	cgc	tgt	gac	cgc	tgc	cag	gag	gga	cat	ttt	ggt	ttc	aat	6253
Thr	Gly	Arg	Arg	Cys	Asp	Arg	Cys	Gln	Glu	Gly	His	Phe	Gly	Phe	Asn	
		2050					2055					2060				
ggc	tgc	ggg	ggc	tgc	cgc	ccg	tgt	gct	tgt	gga	ccg	gcc	gcc	gag	ggc	6301
Gly	Cys	Gly	Gly	Cys	Arg	Pro	Cys	Ala	Cys	Gly	Pro	Ala	Ala	Glu	Gly	
	2065					2070					2075					
tcc	gag	tgc	cac	ccc	cag	agc	gga	cag	tgc	cac	tgc	cga	cca	ggg	acc	6349
Ser	Glu	Cys	His	Pro	Gln	Ser	Gly	Gln	Cys	His	Cys	Arg	Pro	Gly	Thr	
	2080				2085					2090						
atg	gga	ccc	cag	tgc	cgc	gag	tgt	gcc	cct	ggc	tac	tgg	ggg	ctc	cct	6397
Met	Gly	Pro	Gln	Cys	Arg	Glu	Cys	Ala	Pro	Gly	Tyr	Trp	Gly	Leu	Pro	
2095				2100					2105					2110		
gag	cag	ggc	tgc	agg	cgc	tgc	cag	tgc	cct	ggg	ggc	cgc	tgt	gac	cct	6445
Glu	Gln	Gly	Cys	Arg	Arg	Cys	Gln	Cys	Pro	Gly	Gly	Arg	Cys	Asp	Pro	
			2115				2120					2125				
cac	acg	ggc	cgc	tgc	aac	tgc	ccc	ccg	ggg	ctc	agc	ggg	gag	cgc	tgc	6493
His	Thr	Gly	Arg	Cys	Asn	Cys	Pro	Pro	Gly	Leu	Ser	Gly	Glu	Arg	Cys	
		2130				2135					2140					
gac	acc	tgc	agc	cag	cag	cat	cag</									

ctg gat gac ctg gaa cgg gcc ggc gcc ctc ctc ccc gcc att cac gag Leu Asp Asp Leu Glu Arg Ala Gly Ala Leu Leu Pro Ala Ile His Glu 2175 2180 2185 2190	6637
caa ctg cgt ggc atc aat gcc agc tcc atg gcc tgg gcc cgt ctg cac Gln Leu Arg Gly Ile Asn Ala Ser Ser Met Ala Trp Ala Arg Leu His 2195 2200 2205	6685
agg ctg aac gcc tcc atc gct gac ctg cag agc cag ctc cgg agc ccc Arg Leu Asn Ala Ser Ile Ala Asp Leu Gln Ser Gln Leu Arg Ser Pro 2210 2215 2220	6733
ctg ggc ccc cgc cat gag acg gca cag cag ctg gag gtg ctg gag cag Leu Gly Pro Arg His Glu Thr Ala Gln Gln Leu Glu Val Leu Glu Gln 2225 2230 2235	6781
cag agc aca agc ctc ggg cag gac gca cgg cgg cta ggc ggc cag gcc Gln Ser Thr Ser Leu Gly Gln Asp Ala Arg Arg Leu Gly Gly Gln Ala 2240 2245 2250	6829
gtg ggg acc cga gac cag gcg agc caa ttg ctg gcc ggc acc gag gcc Val Gly Thr Arg Asp Gln Ala Ser Gln Leu Leu Ala Gly Thr Glu Ala 2255 2260 2265 2270	6877
aca ctg ggc cat gcg aag acg ctg ttg gcg gcc atc cgg gct gtg gac Thr Leu Gly His Ala Lys Thr Leu Leu Ala Ala Ile Arg Ala Val Asp 2275 2280 2285	6925
cgc acc ctg agc gag ctc atg tcc cag acg ggc cac ctg ggg ctg gcc Arg Thr Leu Ser Glu Leu Met Ser Gln Thr Gly His Leu Gly Leu Ala 2290 2295 2300	6973
aat gcc tcg gct cca tca ggt gag cag ctg ctc cgg aca ctg gcc gag Asn Ala Ser Ala Pro Ser Gly Glu Gln Leu Leu Arg Thr Leu Ala Glu 2305 2310 2315	7021
gtg gag cgg ctg ctc tgg gag atg cgg gcc cgg gac ctg ggg gcc ccg Val Glu Arg Leu Leu Trp Glu Met Arg Ala Arg Asp Leu Gly Ala Pro 2320 2325 2330	7069
cag gca gca gct gag gct gag ttg gct gca gca cag aga ttg ctg gcc Gln Ala Ala Ala Glu Ala Glu Leu Ala Ala Ala Gln Arg Leu Leu Ala 2335 2340 2345 2350	7117
cgg gtg cag gag cag ctg agc agc ctc tgg gag gag aac cag gca ctg Arg Val Gln Glu Gln Leu Ser Ser Leu Trp Glu Glu Asn Gln Ala Leu 2355 2360 2365	7165
gcc aca caa acc cgc gac cgg ctg gcc cag cac gag gcc ggc ctc atg Ala Thr Gln Thr Arg Asp Arg Leu Ala Gln His Glu Ala Gly Leu Met 2370 2375 2380	7213
gac ctg cga gag gct ttg aac cgg gca gtg gac gcc aca cgg gag gcc Asp Leu Arg Glu Ala Leu Asn Arg Ala Val Asp Ala Thr Arg Glu Ala 2385 2390 2395	7261
cag gag ctc aac agc cgc aac cag gag cgc ctg gag gaa gcc ctg caa Gln Glu Leu Asn Ser Arg Asn Gln Glu Arg Leu Glu Glu Ala Leu Gln 2400 2405 2410	7309
agg aag cag gag ctg tcc cgg gac aat gcc acc ctg cag gcc act ctg	7357

Arg	Lys	Gln	Glu	Leu	Ser	Arg	Asp	Asn	Ala	Thr	Leu	Gln	Ala	Thr	Leu	
2415					2420				2425						2430	
cat	gcg	gct	agg	gac	acc	ctg	gcc	agc	gtc	ttc	aga	ttg	ctg	cac	agc	7405
His	Ala	Ala	Arg	Asp	Thr	Leu	Ala	Ser	Val	Phe	Arg	Leu	Leu	His	Ser	
				2435					2440					2445		
ctg	gac	cag	gct	aag	gag	gag	ctg	gag	cgc	ctc	gcc	gcc	agc	ctg	gac	7453
Leu	Asp			Lys	Glu	Glu	Leu	Glu	Arg	Leu	Ala	Ala	Ser	Leu	Asp	
				2450				2455						2460		
ggg	gct	cgg	acc	cca	ctg	ctg	cag	agg	atg	cag	acc	ttc	tcc	ccg	gcg	7501
Gly	Ala	Arg	Thr	Pro	Leu	Leu	Gln	Arg	Met	Gln	Thr	Phe	Ser	Pro	Ala	
				2465			2470						2475			
ggc	agc	aag	ctg	cgt	cta	gtg	gag	gcc	gcc	gag	gcc	cac	gca	cag	cag	7549
Gly	Ser	Lys	Leu	Arg	Leu	Val	Glu	Ala	Ala	Glu	Ala	His	Ala	Gln	Gln	
						2485							2490			
ctg	ggc	cag	ctg	gca	ctc	aat	ctg	tcc	agc	atc	atc	ctg	gac	gtc	aac	7597
Leu	Gly	Gln	Leu	Ala	Leu	Asn	Leu	Ser	Ser	Ile	Ile	Leu	Asp	Val	Asn	
2495					2500					2505					2510	
cag	gac	cgc	ctc	acc	cag	agg	gcc	atc	gag	gcc	tcc	aac	gcc	tac	agc	7645
Gln	Asp	Arg	Leu	Thr	Gln	Arg	Ala	Ile	Glu	Ala	Ser	Asn	Ala	Tyr	Ser	
				2515					2520					2525		
cgc	atc	ctg	cag	gcc	gtg	cag	gct	gcc	gag	gat	gct	gct	ggc	cag	gcc	7693
Arg	Ile	Leu	Gln	Ala	Val	Gln	Ala	Ala	Glu	Asp	Ala	Ala	Gly	Gln	Ala	
				2530				2535					2540			
ctg	cag	cag	gcg	gac	cac	acg	tgg	gcg	acg	gtg	gtg	cgg	cag	ggc	ctg	7741
Leu	Gln	Gln	Ala	Asp	His	Thr	Trp	Ala	Thr	Val	Val	Arg	Gln	Gly	Leu	
				2545			2550					2555				
gtg	gac	cga	gcc	cag	cag	ctc	ctg	gcc	aac	agc	act	gca	cta	gaa	gag	7789
Val	Asp	Arg	Ala	Gln	Gln	Leu	Leu	Ala	Asn	Ser	Thr	Ala	Leu	Glu	Glu	
						2565					2570					
gcc	atg	ctc	cag	gaa	cag	cag	agg	ctg	ggc	ctt	gtg	tgg	gct	gcc	ctc	7837
Ala	Met	Leu	Gln	Glu	Gln	Gln	Arg	Leu	Gly	Leu	Val	Trp	Ala	Ala	Leu	
2575					2580					2585					2590	
cag	ggt	gcc	agg	acc	cag	ctc	cga	gat	gtc	cgg	gcc	aag	aag	gac	cag	7885
Gln	Gly	Ala	Arg	Thr	Gln	Leu	Arg	Asp	Val	Arg	Ala	Lys	Lys	Asp	Gln	
				2595					2600					2605		
ctg	gag	gcg	cac	atc	cag	gcg	gcg	cag	gcc	atg	ctt	gcc	atg	gac	aca	7933
Leu	Glu	Ala	His	Ile	Gln	Ala	Ala	Gln	Ala	Met	Leu	Ala	Met	Asp	Thr	
				2610				2615					2620			
gac	gag	aca	agc	aag	aag	atc	gca	cat	gcc	aag	gct	gtg	gct	gct	gaa	

2655	2660	2665	2670	
gac ctg ggc cag gca gtg ctt gac gca ggc cac tca gtg tcc acc ctg				8125
Asp Leu Gly Gln Ala Val Leu Asp Ala Gly His Ser Val Ser Thr Leu				
2675	2680	2685		
gag aag acg ctg ccc cag ctg ctg gcc aag ctg agc atc ctg gag aac				8173
Glu Lys Thr Leu Pro Gln Leu Leu Ala Lys Leu Ser Ile Leu Glu Asn				
2690	2695	2700		
cgt ggg gtg cac aac gcc agc ctg gcc ctg tcc gcc agc att ggc cgc				8221
Arg Gly Val His Asn Ala Ser Leu Ala Leu Ser Ala Ser Ile Gly Arg				
2705	2710	2715		
gtg cga gag ctc att gcc cag gcc cgg ggg gct gcc agt aag gtc aag				8269
Val Arg Glu Leu Ile Ala Gln Ala Arg Gly Ala Ala Ser Lys Val Lys				
2720	2725	2730		
gtg ccc atg aag ttc aac ggg cgc tca				8296
Val Pro Met Lys Phe Asn Gly Arg Ser				
2735	2740			
<210> 36				
<211> 2743				
<212> PRT				
<213> Homo sapiens				
<400> 36				
Met Ala Lys Arg Leu Cys Ala Gly Ser Ala Leu Cys Val Arg Gly Pro				
1 5 10 15				
Arg Gly Pro Ala Pro Leu Leu Leu Val Gly Leu Ala Leu Leu Gly Ala				
20 25 30				
Ala Arg Ala Arg Glu Glu Ala Gly Gly Gly Phe Ser Leu His Pro Pro				
35 40 45				
Tyr Phe Asn Leu Ala Glu Gly Ala Arg Ile Ala Ala Ser Ala Thr Cys				
50 55 60				
Gly Glu Glu Ala Pro Ala Arg Gly Ser Pro Arg Pro Thr Glu Asp Leu				
65 70 75 80				
Tyr Cys Lys Leu Val Gly Gly Pro Val Ala Gly Gly Asp Pro Asn Gln				
85 90 95				
Thr Ile Arg Gly Gln Tyr Cys Asp Ile Cys Thr Ala Ala Asn Ser Asn				
100 105 110				
Lys Ala His Pro Ala Ser Asn Ala Ile Asp Gly Thr Glu Arg Trp Trp				
115 120 125				
Gln Ser Pro Pro Leu Ser Arg Gly Leu Glu Tyr Asn Glu Val Asn Val				
130 135 140				
Thr Leu Asp Leu Gly Gln Val Phe His Val Ala Tyr Val Leu Ile Lys				
145 150 155 160				
Phe Ala Asn Ser Pro Arg Pro Asp Leu Trp Val Leu Glu Arg Ser Met				
165 170 175				

```

Asp Phe Gly Arg Thr Tyr Gln Pro Trp Gln Phe Phe Ala Ser Ser Lys
    180                                185                                190

Arg Asp Cys Leu Glu Arg Phe Gly Pro Gln Thr Leu Glu Arg Ile Thr
    195                                200                                205

Arg Asp Asp Ala Ala Ile Cys Thr Thr Glu Tyr Ser Arg Ile Val Pro
    210                                215                                220

Leu Glu Asn Gly Glu Ile Val Val Ser Leu Val Asn Gly Arg Pro Gly
    225                                230                                235                                240

Ala Met Asn Phe Ser Tyr Ser Pro Leu Leu Arg Glu Phe Thr Lys Ala
    245                                250                                255

Thr Asn Val Arg Leu Arg Phe Leu Arg Thr Asn Thr Leu Leu Gly His
    260                                265                                270

Leu Met Gly Lys Ala Leu Arg Asp Pro Thr Val Thr Arg Arg Tyr Tyr
    275                                280                                285

Tyr Ser Ile Lys Asp Ile Ser Ile Gly Gly Arg Cys Val Cys His Gly
    290                                295                                300

His Ala Asp Ala Cys Asp Ala Lys Asp Pro Thr Asp Pro Phe Arg Leu
    305                                310                                315                                320

Gln Cys Thr Cys Gln His Asn Thr Cys Gly Gly Thr Cys Asp Arg Cys
    325                                330                                335

Cys Pro Gly Phe Asn Gln Gln Pro Trp Lys Pro Ala Thr Ala Asn Ser
    340                                345                                350

Ala Asn Glu Cys Gln Ser Cys Asn Cys Tyr Gly His Ala Thr Asp Cys
    355                                360                                365

Tyr Tyr Asp Pro Glu Val Asp Arg Arg Arg Ala Ser Gln Ser Leu Asp
    370                                375                                380

Gly Thr Tyr Gln Gly Gly Gly Val Cys Ile Asp Cys Gln His His Thr
    385                                390                                395                                400

Ala Gly Val Asn Cys Glu Arg Cys Leu Pro Gly Phe Tyr Arg Ser Pro
    405                                410                                415

Asn His Pro Leu Asp Ser Pro His Val Cys Arg Arg Cys Asn Cys Glu
    420                                425                                430

Ser Asp Phe Thr Asp Gly Thr Cys Glu Asp Leu Thr Gly Arg Cys Tyr
    435                                440                                445

Cys Arg Pro Asn Phe Ser Gly Glu Arg Cys Asp Val Cys Ala Glu Gly
    450                                455                                460

Phe Thr Gly Phe Pro Ser Cys Tyr Pro Thr Pro Ser Ser Ser Asn Asp
    465                                470                                475                                480

Thr Arg Glu Gln Val Leu Pro Ala Gly Gln Ile Val Asn Cys Asp Cys
    485                                490                                495

```

Ser Ala Ala Gly Thr Gln Gly Asn Ala Cys Arg Lys Asp Pro Arg Val  
500 505 510

Gly Arg Cys Leu Cys Lys Pro Asn Phe Gln Gly Thr His Cys Glu Leu  
515 520 525

Cys Ala Pro Gly Phe Tyr Gly Pro Gly Cys Gln Pro Cys Gln Cys Ser  
530 535 540

Ser Pro Gly Val Ala Asp Asp Arg Cys Asp Pro Asp Thr Gly Gln Cys  
545 550 555 560

Arg Cys Arg Val Gly Phe Glu Gly Ala Thr Cys Asp Arg Cys Ala Pro  
565 570 575

Gly Tyr Phe His Phe Pro Leu Cys Gln Leu Cys Gly Cys Ser Pro Ala  
580 585 590

Gly Thr Leu Pro Glu Gly Cys Asp Glu Ala Gly Arg Cys Leu Cys Gln  
595 600 605

Pro Glu Phe Ala Gly Pro His Cys Asp Arg Cys Arg Pro Gly Tyr His  
610 615 620

Gly Phe Pro Asn Cys Gln Ala Cys Thr Cys Asp Pro Arg Gly Ala Leu  
625 630 635 640

Asp Gln Leu Cys Gly Ala Gly Gly Leu Cys Arg Cys Arg Pro Gly Tyr  
645 650 655

Thr Gly Thr Ala Cys Gln Glu Cys Ser Pro Gly Phe His Gly Phe Pro  
660 665 670

Ser Cys Val Pro Cys His Cys Ser Ala Glu Gly Ser Leu His Ala Ala  
675 680 685

Cys Asp Pro Arg Ser Gly Gln Cys Ser Cys Arg Pro Arg Val Thr Gly  
690 695 700

Leu Arg Cys Asp Thr Cys Val Pro Gly Ala Tyr Asn Phe Pro Tyr Cys  
705 710 715 720

Glu Ala Gly Ser Cys His Pro Ala Gly Leu Ala Pro Val Asp Pro Ala  
725 730 735

Leu Pro Glu Ala Gln Val Pro Cys Met Cys Arg Ala His Val Glu Gly  
740 745 750

Pro Ser Cys Asp Arg Cys Lys Pro Gly Phe Trp Gly Leu Ser Pro Ser  
755 760 765

Asn Pro Glu Gly Cys Thr Arg Cys Ser Cys Asp Leu Arg Gly Thr Leu  
770 775 780

Gly Gly Val Ala Glu Cys Gln Pro Gly Thr Gly Gln Cys Phe Cys Lys  
785 790 795 800

Pro His Val Cys Gly Gln Ala Cys Ala Ser Cys Lys Asp Gly Phe Phe  
805 810 815

Gly Leu Asp Gln Ala Asp Tyr Phe Gly Cys Arg Ser Cys Arg Cys Asp

820	825	830
Ile Gly Gly Ala Leu Gly Gln Ser Cys Glu Pro Arg Thr Gly Val Cys		
835	840	845
Arg Cys Arg Pro Asn Thr Gln Gly Pro Thr Cys Ser Glu Pro Ala Arg		
850	855	860
Asp His Tyr Leu Pro Asp Leu His His Leu Arg Leu Glu Leu Glu Glu		
865	870	875
Ala Ala Thr Pro Glu Gly His Ala Val Arg Phe Gly Phe Asn Pro Leu		
885	890	895
Glu Phe Glu Asn Phe Ser Trp Arg Gly Tyr Ala Gln Met Ala Pro Val		
900	905	910
Gln Pro Arg Ile Val Ala Arg Leu Asn Leu Thr Ser Pro Asp Leu Phe		
915	920	925
Trp Leu Val Phe Arg Tyr Val Asn Arg Gly Ala Met Ser Val Ser Gly		
930	935	940
Arg Val Ser Val Arg Glu Glu Gly Arg Ser Ala Ala Cys Ala Asn Cys		
945	950	955
Thr Ala Gln Ser Gln Pro Val Ala Phe Pro Pro Ser Thr Glu Pro Ala		
965	970	975
Phe Ile Thr Val Pro Gln Arg Gly Phe Gly Glu Pro Phe Val Leu Asn		
980	985	990
Pro Gly Thr Trp Ala Leu Arg Val Glu Ala Glu Gly Val Leu Leu Asp		
995	1000	1005
Tyr Val Val Leu Leu Pro Ser Ala Tyr Tyr Glu Ala Ala Leu Leu Gln		
1010	1015	1020
Leu Arg Val Thr Glu Ala Cys Thr Tyr Arg Pro Ser Ala Gln Gln Ser		
1025	1030	1035
Gly Asp Asn Cys Leu Leu Tyr Thr His Leu Pro Leu Asp Gly Phe Pro		
1045	1050	1055
Ser Ala Ala Gly Leu Glu Ala Leu Cys Arg Gln Asp Asn Ser Leu Pro		
1060	1065	1070
Arg Pro Cys Pro Thr Glu Gln Leu Ser Pro Ser His Pro Pro Leu Ile		
1075	1080	1085
Thr Cys Thr Gly Ser Asp Val Asp Val Gln Leu Gln Val Ala Val Pro		
1090	1095	1100
Gln Pro Gly Arg Tyr Ala Leu Val Val Glu Tyr Ala Asn Glu Asp Ala		
1105	1110	1115
Arg Gln Glu Val Gly Val Ala Val His Thr Pro Gln Arg Ala Pro Gln		
1125	1130	1135
Gln Gly Leu Leu Ser Leu His Pro Cys Leu Tyr Ser Thr Leu Cys Arg		
1140	1145	1150







1795	1800	1805
Arg Arg Val Ala Leu Glu Val Ala Ser Pro Ala Gly Gln Gly Ala Leu 1810 1815 1820		
Ala Ser Asn Val Glu Leu Cys Leu Cys Pro Ala Ser Tyr Arg Gly Asp 1825 1830 1835 1840		
Ser Cys Gln Glu Cys Ala Pro Gly Phe Tyr Arg Asp Val Lys Gly Leu 1845 1850 1855		
Phe Leu Gly Arg Cys Val Pro Cys Gln Cys His Gly His Ser Asp Arg 1860 1865 1870		
Cys Leu Pro Gly Ser Gly Val Cys Val Asp Cys Gln His Asn Thr Glu 1875 1880 1885		
Gly Ala His Cys Glu Arg Cys Gln Ala Gly Phe Met Ser Ser Arg Asp 1890 1895 1900		
Asp Pro Ser Ala Pro Cys Val Ser Cys Pro Cys Pro Leu Ser Val Pro 1905 1910 1915 1920		
Ser Asn Asn Phe Ala Glu Gly Cys Val Leu Arg Gly Gly Arg Thr Gln 1925 1930 1935		
Cys Leu Cys Lys Pro Gly Tyr Ala Gly Ala Ser Cys Glu Arg Cys Ala 1940 1945 1950		
Pro Gly Phe Phe Gly Asn Pro Leu Val Leu Gly Ser Ser Cys Gln Pro 1955 1960 1965		
Cys Asp Cys Ser Gly Asn Gly Asp Pro Asn Leu Leu Phe Ser Asp Cys 1970 1975 1980		
Asp Pro Leu Thr Gly Ala Cys Arg Gly Cys Leu Arg His Thr Thr Gly 1985 1990 1995 2000		
Pro Arg Cys Glu Ile Cys Ala Pro Gly Phe Tyr Gly Asn Ala Leu Leu 2005 2010 2015		
Pro Gly Asn Cys Thr Arg Cys Asp Cys Thr Pro Cys Gly Thr Glu Ala 2020 2025 2030		
Cys Asp Pro His Ser Gly His Cys Leu Cys Lys Ala Gly Val Thr Gly 2035 2040 2045		
Arg Arg Cys Asp Arg Cys Gln Glu Gly His Phe Gly Phe Asn Gly Cys 2050 2055 2060		
Gly Gly Cys Arg Pro Cys Ala Cys Gly Pro Ala Ala Glu Gly Ser Glu 2065 2070 2075 2080		
Cys His Pro Gln Ser Gly Gln Cys His Cys Arg Pro Gly Thr Met Gly 2085 2090 2095		
Pro Gln Cys Arg Glu Cys Ala Pro Gly Tyr Trp Gly Leu Pro Glu Gln 2100 2105 2110		
Gly Cys Arg Arg Cys Gln Cys Pro Gly Gly Arg Cys Asp Pro His Thr 2115 2120 2125		

Gly Arg Cys Asn Cys Pro Pro Gly Leu Ser Gly Glu Arg Cys Asp Thr		
2130	2135	2140
Cys Ser Gln Gln His Gln Val Pro Val Pro Gly Gly Pro Val Gly His		
2145	2150	2155 2160
Ser Ile His Cys Glu Val Cys Asp His Cys Val Val Leu Leu Leu Asp		
2165	2170	2175
Asp Leu Glu Arg Ala Gly Ala Leu Leu Pro Ala Ile His Glu Gln Leu		
2180	2185	2190
Arg Gly Ile Asn Ala Ser Ser Met Ala Trp Ala Arg Leu His Arg Leu		
2195	2200	2205
Asn Ala Ser Ile Ala Asp Leu Gln Ser Gln Leu Arg Ser Pro Leu Gly		
2210	2215	2220
Pro Arg His Glu Thr Ala Gln Gln Leu Glu Val Leu Glu Gln Gln Ser		
2225	2230	2235 2240
Thr Ser Leu Gly Gln Asp Ala Arg Arg Leu Gly Gly Gln Ala Val Gly		
2245	2250	2255
Thr Arg Asp Gln Ala Ser Gln Leu Leu Ala Gly Thr Glu Ala Thr Leu		
2260	2265	2270
Gly His Ala Lys Thr Leu Leu Ala Ala Ile Arg Ala Val Asp Arg Thr		
2275	2280	2285
Leu Ser Glu Leu Met Ser Gln Thr Gly His Leu Gly Leu Ala Asn Ala		
2290	2295	2300
Ser Ala Pro Ser Gly Glu Gln Leu Leu Arg Thr Leu Ala Glu Val Glu		
2305	2310	2315 2320
Arg Leu Leu Trp Glu Met Arg Ala Arg Asp Leu Gly Ala Pro Gln Ala		
2325	2330	2335
Ala Ala Glu Ala Glu Leu Ala Ala Ala Gln Arg Leu Leu Ala Arg Val		
2340	2345	2350
Gln Glu Gln Leu Ser Ser Leu Trp Glu Glu Asn Gln Ala Leu Ala Thr		
2355	2360	2365
Gln Thr Arg Asp Arg Leu Ala Gln His Glu Ala Gly Leu Met Asp Leu		
2370	2375	2380
Arg Glu Ala Leu Asn Arg Ala Val Asp Ala Thr Arg Glu Ala Gln Glu		
2385	2390	2395 2400
Leu Asn Ser Arg Asn Gln Glu Arg Leu Glu Glu Ala Leu Gln Arg Lys		
2405	2410	2415
Gln Glu Leu Ser Arg Asp Asn Ala Thr Leu Gln Ala Thr Leu His Ala		
2420	2425	2430
Ala Arg Asp Thr Leu Ala Ser Val Phe Arg Leu Leu His Ser Leu Asp		
2435	2440	2445

Gln Ala Lys Glu Glu Leu Glu Arg Leu Ala Ala Ser Leu Asp Gly Ala  
2450 2455 2460

Arg Thr Pro Leu Leu Gln Arg Met Gln Thr Phe Ser Pro Ala Gly Ser  
2465 2470 2475 2480

Lys Leu Arg Leu Val Glu Ala Ala Glu Ala His Ala Gln Gln Leu Gly  
2485 2490 2495

Gln Leu Ala Leu Asn Leu Ser Ser Ile Ile Leu Asp Val Asn Gln Asp  
2500 2505 2510

Arg Leu Thr Gln Arg Ala Ile Glu Ala Ser Asn Ala Tyr Ser Arg Ile  
2515 2520 2525

Leu Gln Ala Val Gln Ala Ala Glu Asp Ala Ala Gly Gln Ala Leu Gln  
2530 2535 2540

Gln Ala Asp His Thr Trp Ala Thr Val Val Arg Gln Gly Leu Val Asp  
2545 2550 2555 2560

Arg Ala Gln Gln Leu Leu Ala Asn Ser Thr Ala Leu Glu Glu Ala Met  
2565 2570 2575

Leu Gln Glu Gln Gln Arg Leu Gly Leu Val Trp Ala Ala Leu Gln Gly  
2580 2585 2590

Ala Arg Thr Gln Leu Arg Asp Val Arg Ala Lys Lys Asp Gln Leu Glu  
2595 2600 2605

Ala His Ile Gln Ala Ala Gln Ala Met Leu Ala Met Asp Thr Asp Glu  
2610 2615 2620

Thr Ser Lys Lys Ile Ala His Ala Lys Ala Val Ala Ala Glu Ala Gln  
2625 2630 2635 2640

Asp Thr Ala Thr Arg Val Gln Ser Gln Leu Gln Ala Met Gln Glu Asn  
2645 2650 2655

Val Glu Arg Trp Gln Gly Gln Tyr Glu Gly Leu Arg Gly Gln Asp Leu  
2660 2665 2670

Gly Gln Ala Val Leu Asp Ala Gly His Ser Val Ser Thr Leu Glu Lys  
2675 2680 2685

Thr Leu Pro Gln Leu Leu Ala Lys Leu Ser Ile Leu Glu Asn Arg Gly  
2690 2695 2700

Val His Asn Ala Ser Leu Ala Leu Ser Ala Ser Ile Gly Arg Val Arg  
2705 2710 2715 2720

Glu Leu Ile Ala Gln Ala Arg Gly Ala Ala Ser Lys Val Lys Val Pro  
2725 2730 2735

Met Lys Phe Asn Gly Arg Ser  
2740